South Coast
Air Quality Management District
21865 Copley Drive, Diamond Bar, CA 91765-4178
(909) 396-2000 • www.aqmd.gov

February 15, 2008

Mr. Gerardo Rios – via email (R9AirPermits_sc@epa.gov)
USEPA Region IX, Mail Stop AIR-3
75 Hawthorne
San Francisco, CA 94105

SUBJECT: City of Burbank Water and Power, ID# 25638
Proposed Modifications to Olive 1 and 2 Boilers

Dear Mr. Rios:

The South Coast Air Quality Management District (AQMD) has received and reviewed minor Title V revision applications from City of Burbank Water and Power, located at 164 Magnolia Blvd, Burbank 91502, for a proposed modification to utility boilers Olive 1 and 2. The facility proposes to remove a cyclone separator associated with Olive 1, and to remove the preheat combustion air burner associated with Olive 2. In addition, AQMD is proposing to issue the final Permits to Operate for Boilers 1 and 2 and their associated SCRs, and move this equipment from Section H of the permit to Section D. In accordance with Rule 3006, the minor revision is subject to a 45-day EPA review period.

The AQMD has evaluated these applications and made a preliminary determination that the equipment will be constructed and operated in compliance with all of the applicable requirements of our rules and regulations. We intend to issue the final permit upon EPA approval of the Title V Minor Revision.

If you wish to provide comments or have any questions regarding this project, please contact Mr. Chris Perri at (909) 396-2696/ cperri@aqmd.gov or Mr. John Yee at (909)396-2531/ jyee@aqmd.gov.

Sincerely,

Michael D. Mills

Michael D. Mills, P.E.
Senior Manager
General Commercial & Energy Team

Cc: Devin Burns, City of Burbank

Enclosures:
Proposed Title V Permit
Engineering Analysis

CERTIFIED MAIL/RETURN RECEIPT REQUESTED

FACILITY PERMIT TO OPERATE

BURBANK CITY, BURBANK WATER & POWER
164 W MAGNOLIA BLVD
BURBANK, CA 91502

NOTICE

IN ACCORDANCE WITH RULE 206, THIS PERMIT TO OPERATE OR A COPY THEREOF MUST BE KEPT AT THE LOCATION FOR WHICH IT IS ISSUED.

THIS PERMIT DOES NOT AUTHORIZE THE EMISSION OF AIR CONTAMINANTS IN EXCESS OF THOSE ALLOWED BY DIVISION 26 OF THE HEALTH AND SAFETY CODE OF THE STATE OF CALIFORNIA OR THE RULES OF THE SOUTH COAST AIR QUALITY MANAGEMENT DISTRICT. THIS PERMIT SHALL NOT BE CONSTRUED AS PERMISSION TO VIOLATE EXISTING LAWS, ORDINANCES, REGULATIONS OR STATUTES OF ANY OTHER FEDERAL, STATE OR LOCAL GOVERNMENTAL AGENCIES.

Barry R. Wallerstein, D. Env.
EXECUTIVE OFFICER

By _____
Carol Coy
Deputy Executive Officer
Engineering & Compliance

FACILITY PERMIT TO OPERATE
BURBANK CITY, BURBANK WATER & POWER

SECTION D: FACILITY DESCRIPTION AND EQUIPMENT SPECIFIC CONDITIONS

The operator shall comply with the terms and conditions set forth below:

Equipment	ID No.	Connected To	RECLAIM Source Type/ Monitoring Unit	Emissions * And Requirements	Conditions
Process 1 : EXTERNAL COMBUSTION					
System 1 : POWER GENERATION					
BOILER, OLIVE NO. 1, NATURAL GAS, RILEY STOKER, WITH LOW NOX BURNER, 551.84 MMBTU/HR WITH A/N: BURNER, NATURAL GAS, AUS, MODEL DFL-815, SIX BURNERS, WITH LOW NOX BURNER, 551.84 MMBTU/HR GENERATOR, 44 MW	D17	C58	NOX: MAJOR SOURCE**	**CO:** 2000 PPMV (5) **[RULE 407,4-2-1982]** ; **NOX:** 148.67 LBS/MMSCF NATURAL GAS (1) **[RULE 2012,5-6-2005]** ; **NOX:** 5 PPMV NATURAL GAS (5) *[RULE 2009,1-7-2005]* **PM:** 0.1 GRAINS/SCF (5) **[RULE 409,8-7-1981]** ; **SO2:** (9) **[40CFR 72 - Acid Rain Provisions,11-24-1997]**	A99.1, A99.2, A99.6, A195.4, E57.3, E193.3
SELECTIVE CATALYTIC REDUCTION, HALDOR TOPSOE A/S, 719.11 CU.FT.; WIDTH: 24 FT; HEIGHT: 7 FT 10 IN; LENGTH: 4 FT 10 IN A/N:	C58	D17		**NH3:** 10 PPMV NATURAL GAS (4) *[RULE 1303,12-6-2002;* **RULE 1303(a)(1)-BACT,5-10-1996]**	A195.5, D12.5, D12.6, D12.7, D29.2, E73.2, E179.1, E179.2, E193.3
BOILER, OLIVE NO. 2, NATURAL GAS, RILEY STOKER, S/N 3454, WITH SIX RILEY GAS BURNERS, 604.7 MMBTU/HR WITH A/N:	D16	C63	NOX: MAJOR SOURCE**	**CO:** 2000 PPMV (5) **[RULE 407,4-2-1982]** ; **NOX:** 148.67 LBS/MMSCF NATURAL GAS (1) **[RULE 2012,5-6-2005]** ; **NOX:** 5 PPMV NATURAL GAS (4) *[RULE 2009,1-7-2005]*	A99.1, A99.6, A195.4, C1.8, E179.1, E193.3

* (1)(1A)(1B) Denotes RECLAIM emission factor
(2)(2A)(2B) Denotes RECLAIM emission rate
(3) Denotes RECLAIM concentration limit
(4) Denotes BACT emission limit
(5)(5A)(5B) Denotes command and control emission limit
(6) Denotes air toxic control rule limit
(7) Denotes NSR applicability limit
(8)(8A)(8B) Denotes 40 CFR limit(e.g. NSPS, NESHAPS,etc.)
(9) See App B for Emission Limits
(10) See Section J for NESHAP/MACT requirements

** Refer to Section F and G of this permit to determine the monitoring, recordkeeping and reporting requirements for this device.

FACILITY PERMIT TO OPERATE
BURBANK CITY, BURBANK WATER & POWER

SECTION D: FACILITY DESCRIPTION AND EQUIPMENT SPECIFIC CONDITIONS

The operator shall comply with the terms and conditions set forth below:

Equipment	ID No.	Connected To	RECLAIM Source Type/ Monitoring Unit	Emissions * And Requirements	Conditions
Process 1 : EXTERNAL COMBUSTION					
GENERATOR, 55 MW				**PM:** 0.1 GRAINS/SCF (5) **[RULE 409,8-7-1981]** ; **SO2:** (9) **[40CFR 72 - Acid Rain Provisions,11-24-1997]**	
SELECTIVE CATALYTIC REDUCTION, HALDOR TOPSOE A/S, 920.18 CU.FT.; WIDTH: 24 FT 4.5 IN; HEIGHT: 13 FT 3.25 IN; LENGTH: 4 FT 6 IN A/N:	C63	D16		**NH3:** 10 PPMV NATURAL GAS (4) **[RULE 1303(a)(1)-BACT,5-10-1996]**	A195.5, D12.5, D12.6, D12.7, D29.2, E73.2, E179.1, E179.2, E193.3
Process 2 : INTERNAL COMBUSTION					
System 2 : IC ENGINES					
INTERNAL COMBUSTION ENGINE, EMERGENCY POWER, DIESEL FUEL, DETROIT DIESEL, MODEL 8063-7405, WITH AFTERCOOLER, TURBOCHARGER, 402 HP A/N: 274421	D1		NOX: PROCESS UNIT**	**NOX:** 469 LBS/1000 GAL DIESEL (1) **[RULE 2012,5-6-2005]** ; **PM:** (9) **[RULE 404,2-7-1986]**	C1.1, C177.1, D12.1, E114.1, E116.1, K67.1
INTERNAL COMBUSTION ENGINE, EMERGENCY POWER, DIESEL FUEL, CATERPILLAR, MODEL 3412 DITA, WITH AFTERCOOLER, TURBOCHARGER, 896 BHP WITH A/N: 402827	D57		NOX: PROCESS UNIT**	**CO:** 8.5 GRAM/BHP-HR DIESEL (4) **[RULE 1303(a)(1)-BACT,5-10-1996;*RULE 1303(a)(1)-BACT,12-6-2002*]** ; **NOX:** 469 LBS/1000 GAL DIESEL (1) **[RULE 2012,5-6-2005]**	B61.1, C1.6, D12.9, E162.1, I296.1, K67.1

* (1)(1A)(1B) Denotes RECLAIM emission factor
(2)(2A)(2B) Denotes RECLAIM emission rate
(3) Denotes RECLAIM concentration limit
(4) Denotes BACT emission limit
(5)(5A)(5B) Denotes command and control emission limit
(6) Denotes air toxic control rule limit
(7) Denotes NSR applicability limit
(8)(8A)(8B) Denotes 40 CFR limit(e.g. NSPS, NESHAPS,etc.)
(9) See App B for Emission Limits
(10) See Section J for NESHAP/MACT requirements

** Refer to Section F and G of this permit to determine the monitoring, recordkeeping and reporting requirements for this device.

FACILITY PERMIT TO OPERATE
BURBANK CITY, BURBANK WATER & POWER

SECTION D: FACILITY DESCRIPTION AND EQUIPMENT SPECIFIC CONDITIONS

The operator shall comply with the terms and conditions set forth below:

Equipment	ID No.	Connected To	RECLAIM Source Type/ Monitoring Unit	Emissions * And Requirements	Conditions
Process 2 : INTERNAL COMBUSTION					
GENERATOR, 600 KW				**NOX:** 6.9 GRAM/BHP-HR DIESEL (4) **[RULE 2005,5-6-2005]** ; **PM10:** 0.38 GRAM/BHP-HR DIESEL (4) **[RULE 1303(a)(1)-BACT,5-10-1996;***RULE 1303(a)(1)-BACT,12-6-2002***]** **VOC:** 1 GRAM/BHP-HR DIESEL (4) **[RULE 1303(a)(1)-BACT,5-10-1996;***RULE 1303(a)(1)-BACT,12-6-2002***]**	
Process 7 : R219 EXEMPT EQUIPMENT SUBJECT TO SOURCE-SPECIFIC RULE					
RULE 219 EXEMPT EQUIPMENT, CLEANING EQUIPMENT, SMALL, UNHEATED, NON-CONVEYORIZED	E46			**ROG:** (9) **[RULE 1171,11-7-2003;***RULE 1171,7-14-2006***]**	H23.2
RULE 219 EXEMPT EQUIPMENT, ABRASIVE BLASTING EQUIPMENT, GLOVE-BOX, < = 53 FT3, WITH DUST FILTER	E47			**PM:** (9) **[RULE 1140,2-1-1980;***RULE 1140,8-2-1985;***RULE 404,2-7-1986;RULE 405,2-7-1986]**	D322.2, D381.1, K67.4
RULE 219 EXEMPT EQUIPMENT, COATING EQUIPMENT, PORTABLE, ARCHITECTURAL COATINGS	E48			**ROG:** (9) **[RULE 1113,11-8-1996;***RULE 1113,7-13-2007;***RULE 1171,11-7-2003;***RULE 1171,7-14-2006***]**	K67.5

* (1)(1A)(1B) Denotes RECLAIM emission factor
(2)(2A)(2B) Denotes RECLAIM emission rate
(3) Denotes RECLAIM concentration limit
(4) Denotes BACT emission limit
(5)(5A)(5B) Denotes command and control emission limit
(6) Denotes air toxic control rule limit
(7) Denotes NSR applicability limit
(8)(8A)(8B) Denotes 40 CFR limit(e.g. NSPS, NESHAPS,etc.)
(9) See App B for Emission Limits
(10) See Section J for NESHAP/MACT requirements

** Refer to Section F and G of this permit to determine the monitoring, recordkeeping and reporting requirements for this device.

FACILITY PERMIT TO OPERATE
BURBANK CITY, BURBANK WATER & POWER

SECTION D: FACILITY DESCRIPTION AND EQUIPMENT SPECIFIC CONDITIONS

The operator shall comply with the terms and conditions set forth below:

Equipment	ID No.	Connected To	RECLAIM Source Type/ Monitoring Unit	Emissions * And Requirements	Conditions
Process 7 : R219 EXEMPT EQUIPMENT SUBJECT TO SOURCE-SPECIFIC RULE					
RULE 219 EXEMPT EQUIPMENT, COOLING TOWERS	E49				H23.3

* (1)(1A)(1B) Denotes RECLAIM emission factor
(2)(2A)(2B) Denotes RECLAIM emission rate
(3) Denotes RECLAIM concentration limit
(4) Denotes BACT emission limit
(5)(5A)(5B) *Denotes command and control emission limit*
(6) Denotes air toxic control rule limit
(7) Denotes NSR applicability limit
(8)(8A)(8B) Denotes 40 CFR limit(e.g. NSPS, NESHAPS,etc.)
(9) See App B for Emission Limits
(10) See Section J for NESHAP/MACT requirements

** Refer to Section F and G of this permit to determine the monitoring, recordkeeping and reporting requirements for this device.

FACILITY PERMIT TO OPERATE
BURBANK CITY, BURBANK WATER & POWER

SECTION D: DEVICE ID INDEX

The following sub-section provides an index to the devices that make up the facility description sorted by device ID.

FACILITY PERMIT TO OPERATE
BURBANK CITY, BURBANK WATER & POWER

SECTION D: DEVICE ID INDEX

Device Index For Section D			
Device ID	**Section D Page No.**	**Process**	**System**
D1	2	2	2
D16	1	1	1
D17	1	1	1
E46	3	7	0
E47	3	7	0
E48	3	7	0
E49	4	7	0
D57	2	2	2
C58	1	1	1
C63	2	1	1

FACILITY PERMIT TO OPERATE
BURBANK CITY, BURBANK WATER & POWER

SECTION D: FACILITY DESCRIPTION AND EQUIPMENT SPECIFIC CONDITIONS

The operator shall comply with the terms and conditions set forth below:

FACILITY CONDITIONS

F9.1 Except for open abrasive blasting operations, the operator shall not discharge into the atmosphere from any single source of emissions whatsoever any air contaminant for a period or periods aggregating more than three minutes in any one hour which is:

(a) As dark or darker in shade as that designated No.1 on the Ringelmann Chart, as published by the United States Bureau of Mines; or

(b) Of such opacity as to obscure an observer's view to a degree equal to or greater than does smoke described in subparagraph (a) of this condition.

[RULE 401, 3-2-1984; RULE 401, 9-11-1998]

F14.1 The operator shall not use diesel fuel containing sulfur compounds in excess of 0.05 percent by weight.

[RULE 431.2, 5-4-1990; RULE 431.2, 9-15-2000]

F14.2 The operator shall not use diesel fuel containing sulfur compounds in excess of 15 ppm by weight as supplied by the supplier.

This condition shall become effective on or after June 1, 2004.

[RULE 431.2, 9-15-2000]

F16.1 The operator shall keep records, in a manner approved by the District, for the following parameter(s) or item(s):

Sulfur content of the Natural Gas

[RULE 3004(a)(4)-Periodic Monitoring, 8-11-1995]

FACILITY PERMIT TO OPERATE
BURBANK CITY, BURBANK WATER & POWER

SECTION D: FACILITY DESCRIPTION AND EQUIPMENT SPECIFIC CONDITIONS

The operator shall comply with the terms and conditions set forth below:

F18.1 Acid Rain SO2 Allowance Allocation for affected units are as follows:

Device ID	Boiler ID	Contaminant	Tons in any year
17	Olive No. 1	SO2	131
16	Olive No. 2	SO2	25
19	Magnolia No. 4	SO2	37

a). The allowance allocation(s) shall apply to calendar years 2000 through 2009.

b). The number of allowances allocated to Phase II affected units by U.S. EPA may change in a 1998 revision to 40CFR73 Tables 2,3, and 4. In addition, the number of allowances actually held by an affected source in a unit account may differ from the number allocated by U.S. EPA. Neither of the aforementioned conditions necessitate a revision to the unit SO2 allowance allocations identified in this permit (see 40 CFR 72.84)

[40CFR 73 Subpart B, 1-11-1993]

F24.1 Accidental release prevention requirements of Section 112(r)(7):

a). The operator shall comply with the accidental release prevention requirements pursuant to 40 CFR Part 68 and shall submit to the Executive Officer, as a part of an annual compliance certification, a statement that certifies compliance with all of the requirements of 40 CFR Part 68, including the registration and submission of a risk management plan (RMP).

b). The operator shall submit any additional relevant information requested by the Executive Officer or designated agency.

[40CFR 68 - Accidental Release Prevention, 5-24-1996]

DEVICE CONDITIONS

A. Emission Limits

FACILITY PERMIT TO OPERATE
BURBANK CITY, BURBANK WATER & POWER

SECTION D: FACILITY DESCRIPTION AND EQUIPMENT SPECIFIC CONDITIONS

The operator shall comply with the terms and conditions set forth below:

A99.1 The 148.67 LBS/MMCF NOX emission limit(s) shall only apply during hot standby operations.

[RULE 2012, 5-6-2005]

[Devices subject to this condition : D16, D17]

A99.2 The 148.67 LBS/MMCF NOX emission limit(s) shall only apply during hot standby operations when burning natural gas.

[RULE 2012, 5-6-2005]

[Devices subject to this condition : D17]

A99.6 The 5 PPM NOX emission limit(s) shall not apply during startups and shutdowns and/or when the boiler exhaust prior to the SCR catalyst is less than 500 degrees F.

[RULE 2005, 5-6-2005]

[Devices subject to this condition : D16, D17]

A195.4 The 5 PPMV NOX emission limit(s) is averaged over 60 minutes at 3 percent oxygen, dry.

[RULE 2005, 5-6-2005]

[Devices subject to this condition : D16, D17]

FACILITY PERMIT TO OPERATE
BURBANK CITY, BURBANK WATER & POWER

SECTION D: FACILITY DESCRIPTION AND EQUIPMENT SPECIFIC CONDITIONS

The operator shall comply with the terms and conditions set forth below:

A195.5 The 10 PPMV NH3 emission limit(s) is averaged over 60 minutes at 3 percent O2 dry. The operator shall calculate and continuously record the NH3 slip concentration using the following: NH3(ppmv)=[a-b*c/1E6]*1E6/b, where a=NH3 injection rate (lb/hr)/17 (lb/lb/mole), b=dry exhaust gas flow rate (lb/hr)/29(lb/lb/mole), and c=change in measured NOx across the SCR (ppmvd at 3 percent O2). The operator shall install and maintain a NOx analyzer to measure the SCR inlet NOx ppm accurate to within +/- 5 percent calibrated at least once every 12 months.

The operator shall use the method described above or another alternative method approved by the Executive Officer.

The ammonia slip calculation procedures described above shall not be used for compliance determination or emission information determination without corroborative data using an approved reference test method for the determination of ammonia.

[RULE 1303(a)(1)-BACT, 5-10-1996; RULE 1303(a)(1)-BACT, 12-6-2002]

[Devices subject to this condition : C58, C63]

B. Material/Fuel Type Limits

B61.1 The operator shall only use Diesel fuel containing the following specified compounds:

Compound	Limit	ppm by weight
Sulfur	less than or equal to	15

[RULE 1303(a)(1)-BACT, 5-10-1996; RULE 1303(a)(1)-BACT, 12-6-2002]

[Devices subject to this condition : D57]

C. Throughput or Operating Parameter Limits

FACILITY PERMIT TO OPERATE
BURBANK CITY, BURBANK WATER & POWER

SECTION D: FACILITY DESCRIPTION AND EQUIPMENT SPECIFIC CONDITIONS

The operator shall comply with the terms and conditions set forth below:

C1.1 The operator shall limit the operating time to no more than 200 hour(s) in any one year.

The 200 hours per year shall include no more than 20 hours in any one year for maintenance and testing purposes.

The operation of the engine beyond the 20 hr/yr allotted for engine maintenance and testing shall be allowed only in the event of a loss of grid power or up to 30 minutes prior to a rotating outage, provided that the grid operator or electric utility has ordered rotating outages in the control area where the engine is located or has indicated that it expects to issue such an order at a certain time, and the engine is located in a utility service block that is subject to the rotating outage.

Engine operation shall be terminated immediately after the utility distribution company advises that a rotating outage is no longer imminent or in effect.

[RULE 1110.2, 6-3-2005; **RULE 1304(a)-Modeling and Offset Exemption, 6-14-1996**; RULE 1470, 6-1-2007]

[Devices subject to this condition : D1]

C1.6 The operator shall limit the operating time to no more than 199 hour(s) in any one year.

The 199 hours per year shall include no more than 20 hours in any one year for maintenance and testing purposes.

The operation of the engine beyond the 20 hr/yr allotted for engine maintenance and testing shall be allowed only in the event of a loss of grid power or up to 30 minutes prior to a rotating outage, provided that the grid operator or electric utility has ordered rotating outages in the control area where the engine is located or has indicated that it expects to issue such an order at a certain time, and the engine is located in a utility service block that is subject to the rotating outage.

Engine operation shall be terminated immediately after the utility distribution company advises that a rotating outage is no longer imminent or in effect.

[RULE 1110.2, 6-3-2005; **RULE 1304(a)-Modeling and Offset Exemption, 6-14-1996**; RULE 1401, 5-3-2002; RULE 1470, 6-1-2007; **RULE 2012, 5-6-2005**]

[Devices subject to this condition : D57]

FACILITY PERMIT TO OPERATE
BURBANK CITY, BURBANK WATER & POWER

SECTION D: FACILITY DESCRIPTION AND EQUIPMENT SPECIFIC CONDITIONS

The operator shall comply with the terms and conditions set forth below:

C1.8 The operator shall limit the heat input to no more than 604.70 MM Btu per hour.

The heat input limit shall be based on a 1 hour averaging period.

For the purpose of this condition, heat input shall be defined as the natural gas fuel usage rate in MMscf/hr multiplied by 1050 Btu/scf.

This limit shall be based on the total combined heat input for equipment devices D16 and D62.

The operator shall install and maintain an electronic database which continuously records on an hourly basis, heat input data in MMBtu/hr, averaged over 1 hour. A minimum of 2 years of past operating data shall be maintained in the electronic database. Access to the data shall be made available to the AQMD upon request.

[RULE 1303(a)(1)-BACT, 5-10-1996; RULE 1303(a)(1)-BACT, 12-6-2002; **RULE 2012, 5-6-2005]**

[Devices subject to this condition : D16]

C177.1 The operator shall set and maintain the fuel injection timing of the engine at 4 degrees retarded relative to standard timing.

[RULE 1303(a)(1)-BACT, 5-10-1996; RULE 1303(a)(1)-BACT, 12-6-2002]

[Devices subject to this condition : D1]

D. Monitoring/Testing Requirements

D12.1 The operator shall install and maintain a(n) non-resettable elapsed time meter to accurately indicate the elapsed operating time of the engine.

[RULE 1110.2, 6-3-2005; **RULE 1304(a)-Modeling and Offset Exemption, 6-14-1996]**

[Devices subject to this condition : D1]

FACILITY PERMIT TO OPERATE
BURBANK CITY, BURBANK WATER & POWER

SECTION D: FACILITY DESCRIPTION AND EQUIPMENT SPECIFIC CONDITIONS

The operator shall comply with the terms and conditions set forth below:

D12.5 The operator shall install and maintain a(n) flow meter to accurately indicate the flow rate of the total hourly throughput of injected ammonia. The operator shall continuously record the flow rate with a measuring device or gauge accurate to +/- 5 percent, calibrated once every 12 months.

[RULE 1303(a)(1)-BACT, 5-10-1996; RULE 1303(a)(1)-BACT, 12-6-2002; **RULE 2012, 5-6-2005]**

[Devices subject to this condition : C58, C63]

D12.6 The operator shall install and maintain a(n) temperature gauge to accurately indicate the temperature of the exhaust at the inlet to the SCR reactor. The operator shall continuously record the temperature with a measuring device or gauge accurate to +/- 5 percent, calibrated once every 12 months.

[RULE 1303(a)(1)-BACT, 5-10-1996; RULE 1303(a)(1)-BACT, 12-6-2002; **RULE 2012, 5-6-2005]**

[Devices subject to this condition : C58, C63]

D12.7 The operator shall install and maintain a(n) pressure gauge to accurately indicate the differential pressure across the SCR catalyst bed in inches of water column. The operator shall continuously record the pressure with a measuring device or gauge accurate to +/- 5 percent, calibrated once every 12 months.

[RULE 1303(a)(1)-BACT, 5-10-1996; **RULE 2012, 12-7-1995**; RULE 2012, 3-16-2001]

[Devices subject to this condition : C58, C63]

D12.9 The operator shall install and maintain a(n) non-resettable elapsed time meter to accurately indicate the elapsed operating time of the engine.

[RULE 1110.2, 6-3-2005; **RULE 1304(a)-Modeling and Offset Exemption, 6-14-1996**; RULE 1401, 5-3-2002; **RULE 2012, 5-6-2005]**

[Devices subject to this condition : D57]

FACILITY PERMIT TO OPERATE
BURBANK CITY, BURBANK WATER & POWER

SECTION D: FACILITY DESCRIPTION AND EQUIPMENT SPECIFIC CONDITIONS

The operator shall comply with the terms and conditions set forth below:

D29.2 The operator shall conduct source test(s) for the pollutant(s) identified below.

Pollutant(s) to be tested	Required Test Method(s)	Averaging Time	Test Location
NH3 emissions	District method 207.1 and 5.3 or EPA method 17	1 hour	Outlet of the SCR

The test shall be conducted at least quarterly during the first twelve months of operation and at least annually thereafter, when the equipment is operating at 80 percent load or greater. The NOx concentration, as determined by the CEMS, shall be simultaneously recorded during the ammonia slip test. If the CEMS is inoperable, a test shall be conducted to determine the NOx emissions using District Method 100.1 measured over a 60 minute averaging time period.

The test shall be conducted and the results submitted to the AQMD within 45 days after the test date. The AQMD shall be notified of the date and time of the test at least 7 days prior to the test.

The test shall be conducted to demonstrate compliance with the Rule 1303 concentration limit.

[RULE 1303(a)(1)-BACT, 5-10-1996; RULE 1303(a)(1)-BACT, 12-6-2002]

[Devices subject to this condition : C58, C63]

D322.2 The operator shall perform annual inspection of the equipment and filter media for leaks, broken or torn filter media, and improperly installed filter media.

[RULE 3004(a)(4)-Periodic Monitoring, 12-12-1997]

[Devices subject to this condition : E47]

FACILITY PERMIT TO OPERATE
BURBANK CITY, BURBANK WATER & POWER

SECTION D: FACILITY DESCRIPTION AND EQUIPMENT SPECIFIC CONDITIONS

The operator shall comply with the terms and conditions set forth below:

D381.1 The operator shall conduct an inspection for visible emissions from all stacks and other emission points of this equipment whenever there is a public complaint of visible emissions, whenever visible emissions are observed, and on an annual basis, at least, unless the equipment did not operate during the entire annual period. The routine annual inspection shall be conducted while the equipment is in operation and during daylight hours. If any visible emissions (not including condensed water vapor) are detected, the operator shall take corrective action(s) that eliminates the visible emissions within 24 hours and report the visible emissions as a potential deviation in accordance with the reporting requirements in Section K of this permit.

The operator shall keep the records in accordance with the recordkeeping requirements in Section K of this permit and the following records:

1). Stack or emission point identification;

2). Description of any corrective actions taken to abate visible emissions; and

3). Date and time visible emission was abated.

[RULE 3004(a)(4)-Periodic Monitoring, 12-12-1997]

[Devices subject to this condition : E47]

E. Equipment Operation/Construction Requirements

E57.3 The operator shall vent this equipment to air pollution control equipment which is in full operation and has been issued a permit by the executive officer whenever soot-blowing operations are taking place.

[RULE 401, 3-2-1984; RULE 401, 11-9-2001]

[Devices subject to this condition : D17]

E73.2 Notwithstanding the requirements of Section E conditions, the operator may, at his discretion, choose not to use ammonia injection if any of the following requirement(s) are met:

The inlet exhaust temperature to the SCR reactor is less than 500 degrees F.

[RULE 2012, 5-6-2005]

[Devices subject to this condition : C58, C63]

FACILITY PERMIT TO OPERATE
BURBANK CITY, BURBANK WATER & POWER

SECTION D: FACILITY DESCRIPTION AND EQUIPMENT SPECIFIC CONDITIONS

The operator shall comply with the terms and conditions set forth below:

E114.1 The operator shall not use this equipment in conjunction with any utility voluntary demand reduction program.

[**RULE 1304(a)-Modeling and Offset Exemption, 6-14-1996**]

[Devices subject to this condition : D1]

E116.1 This engine shall not be used as part of a demand response program using interruptible service contract in which a facility receives a payment or reduced rates in return for reducing its electric load on the grid when requested to do so by the utility or the grid operator.

[RULE 1470, 6-1-2007]

[Devices subject to this condition : D1]

E162.1 The operator shall use this equipment only during utility failure periods, except for maintenance purposes.

[RULE 1110.2, 6-3-2005; **RULE 1304(a)-Modeling and Offset Exemption, 6-14-1996**; RULE 1401, 12-7-1990; RULE 1401, 5-3-2002]

[Devices subject to this condition : D57]

E179.1 For the purpose of the following condition number(s), continuously record shall be defined as measuring at least once every hour, and shall be based upon the average of the continuous monitoring for that hour.

Condition Number D 12- 5

Condition Number D 12- 6

Condition Number A 195- 1

Condition Number C 1- 8

[**RULE 1303(a)(1)-BACT, 5-10-1996**; RULE 1303(a)(1)-BACT, 12-6-2002; **RULE 2012, 5-6-2005**]

[Devices subject to this condition : D16, C58, C63]

FACILITY PERMIT TO OPERATE
BURBANK CITY, BURBANK WATER & POWER

SECTION D: FACILITY DESCRIPTION AND EQUIPMENT SPECIFIC CONDITIONS

The operator shall comply with the terms and conditions set forth below:

E179.2 For the purpose of the following condition number(s), continuously record shall be defined as measuring at least once every month, and shall be based upon the average of the continuous monitoring for that month.

Condition Number D 12- 7

[RULE 2012, 5-6-2005]

[Devices subject to this condition : C58, C63]

E193.3 The operator shall construct, operate, and maintain this equipment according to the following specifications:

In compliance with all mitigation measures as *stipulated in the Mitigated Negative* Declaration Resolution No. 26,245, dated May 28, 2002, pertaining to the Burbank Water and Power SCR project.

[CA PRC CEQA, 11-23-1970]

[Devices subject to this condition : D16, D17, C58, C63]

H. Applicable Rules

H23.2 This equipment is subject to the applicable requirements of the following rules or regulations:

Contaminant	Rule	Rule/Subpart
VOC	District Rule	1122

[RULE 1122, 7-11-1997]

[Devices subject to this condition : E46]

FACILITY PERMIT TO OPERATE
BURBANK CITY, BURBANK WATER & POWER

SECTION D: FACILITY DESCRIPTION AND EQUIPMENT SPECIFIC CONDITIONS

The operator shall comply with the terms and conditions set forth below:

H23.3 This equipment is subject to the applicable requirements of the following rules or regulations:

Contaminant	Rule	Rule/Subpart
Chromium, Hexavalent	District Rule	1404

[RULE 1404, 4-6-1990]

[Devices subject to this condition : E49]

I. Administrative

I296.1 This equipment shall not be operated unless the operator demonstrates to the Executive Officer that the facility holds sufficient RTCs to offset the prorated annual emissions increase for the first compliance year of operation. In addition, this equipment shall not be operated unless the operator demonstrates to the Executive Officer that, at the commencement of each compliance year after the first compliance year of operation, the facility holds sufficient RTCs in an amount equal to the annual emissions increase.

[RULE 2005, 5-6-2005]

[Devices subject to this condition : D57]

K. Record Keeping/Reporting

FACILITY PERMIT TO OPERATE
BURBANK CITY, BURBANK WATER & POWER

SECTION D: FACILITY DESCRIPTION AND EQUIPMENT SPECIFIC CONDITIONS

The operator shall comply with the terms and conditions set forth below:

K67.1 The operator shall keep records, in a manner approved by the District, for the following parameter(s) or item(s):

An engine operating log listing on a monthly basis the emergency use hours of operation, maintenance and testing hours of operation, and any other hours of use with a description of the reason for operation. Additionally, each time the engine is started manually, the log shall include the date of operation and the timer reading in hours at the beginning and end of operation

The log shall be kept for a minimum of three calendar years prior to the current year and be made available to District personnel upon request. The total hours of operation for the previous calendar year shall be recorded sometime during the rst 15 days of January of each year

[RULE 1110.2, 6-3-2005; **RULE 1304(a)-Modeling and Offset Exemption, 6-14-1996**; RULE 1470, 6-1-2007]

[Devices subject to this condition : D1, D57]

K67.4 The operator shall keep records, in a manner approved by the District, for the following parameter(s) or item(s):

the name of the person performing the inspection and/or maintenance of the filter media

the date, time, and results of the inspection

the date, time and description of any maintenance or repairs resulting from the inspection

[RULE 3004(a)(4)-Periodic Monitoring, 12-12-1997]

[Devices subject to this condition : E47]

FACILITY PERMIT TO OPERATE
BURBANK CITY, BURBANK WATER & POWER

SECTION D: FACILITY DESCRIPTION AND EQUIPMENT SPECIFIC CONDITIONS

The operator shall comply with the terms and conditions set forth below:

K67.5 The operator shall keep records, in a manner approved by the District, for the following parameter(s) or item(s):

For architectural applications where no thinners, reducers, or other VOC containing materials are added, maintain semi-annual records for all coating consisting of (a) coating type, (b) VOC content as supplied in grams per liter (g/l) of materials for low-solids coatings, (c) VOC content as supplied in g/l of coating, less water and exempt solvent, for other coatings.

For architectural applications where thinners, reducers, or other VOC containing materials are added, maintain daily records for each coating consisting of (a) coating type, (b) VOC content as applied in grams per liter (g/l) of materials used for low-solids coatings, (c) VOC content as applied in g/l of coating, less water and exempt solvent, for other coatings.

[RULE 3004(a)(4)-Periodic Monitoring, 12-12-1997]

[Devices subject to this condition : E48]

FACILITY PERMIT TO OPERATE
BURBANK CITY, BURBANK WATER & POWER

SECTION H: PERMIT TO CONSTRUCT AND TEMPORARY PERMIT TO OPERATE

The operator shall comply with the terms and conditions set forth below:

Equipment	ID No.	Connected To	RECLAIM Source Type/ Monitoring Unit	Emissions * And Requirements	Conditions
Process 2 : INTERNAL COMBUSTION					
System 1 : TURBINES					
GAS TURBINE, LAKE NO. 1, NATURAL GAS, GENERAL ELECTRIC, MODEL LM6000 SPRINT, SIMPLE CYCLE, WITH WATER INJECTION, 450 MMBTU/HR WITH A/N: 401108 Permit to Construct Issued: 02/06/03 GENERATOR, 46 MW	D50	C52	NOX: MAJOR SOURCE**	**CO:** 2000 PPMV (5) **[RULE 407,4-2-1982]** ; **CO:** 6 PPMV (4) **[RULE 1303(a)(1)-BACT,5-10-1996;*RULE 1303(a)(1)-BACT,12-6-2002*]** **NOX:** 5 PPMV (4) **[RULE 2005,5-6-2005]** ; **NOX:** 107 PPMV NATURAL GAS (8) **[40CFR 60 Subpart GG,3-6-1981]** ; **NOX:** 93.6 LBS/MMSCF (1) **[RULE 2012,5-6-2005]** **PM:** 11 LBS/HR (5B) **[RULE 475,10-8-1976;*RULE 475,8-7-1978*]** ; **PM:** 0.1 GRAINS/SCF (5) **[RULE 409,8-7-1981]** ; **PM:** 0.01 GRAINS/SCF (5A) **[RULE 475,10-8-1976** *RULE 475,8-7-1978*] ; **SO2:** (9) **[40CFR 72 - Acid Rain Provisions,11-24-1997]** ; **SOX:** 150 PPMV (8) **[40CFR 60 Subpart GG,3-6-1981]** **VOC:** 2 PPMV (4) **[RULE 1303(a)(1)-BACT,5-10-1996;*RULE 1303(a)(1)-BACT,12-6-2002*]**	A99.3, A99.4, A99.5, A195.2, A195.3, A327.1, C1.7, D12.8, D29.1, D82.1, D82.2, E57.6, I296.1, K67.6

* (1)(1A)(1B) Denotes RECLAIM emission factor
(2)(2A)(2B) Denotes RECLAIM emission rate
(3) Denotes RECLAIM concentration limit
(4) Denotes BACT emission limit
(5)(5A)(5B) Denotes command and control emission limit
(6) Denotes air toxic control rule limit
(7) Denotes NSR applicability limit
(8)(8A)(8B) Denotes 40 CFR limit(e.g. NSPS, NESHAPS,etc.)
(9) See App B for Emission Limits
(10) See Section J for NESHAP/MACT requirements

** Refer to Section F and G of this permit to determine the monitoring, recordkeeping and reporting requirements for this device.

FACILITY PERMIT TO OPERATE
BURBANK CITY, BURBANK WATER & POWER

SECTION H: PERMIT TO CONSTRUCT AND TEMPORARY PERMIT TO OPERATE

The operator shall comply with the terms and conditions set forth below:

Equipment	ID No.	Connected To	RECLAIM Source Type/ Monitoring Unit	Emissions * And Requirements	Conditions
Process 2 : INTERNAL COMBUSTION					
CO OXIDATION CATALYST, JOHNSON MATTHEY, 96 CUBIC FEET OF TOTAL CATALYST VOLUME A/N: 440550 Permit to Construct Issued: 04/05/05	C52	D50 C53			D29.4, K40.3
SELECTIVE CATALYTIC REDUCTION, HALDOR TOPSOE, 805 CU.FT.; WIDTH: 9 FT 3 IN; HEIGHT: 53 FT; LENGTH: 1 FT 11 IN WITH A/N: 440550 Permit to Construct Issued: 04/05/05 AMMONIA INJECTION, GRID	C53	C52 S55		**NH3:** 5 PPMV (4) [**RULE 1303(a)(1)-BACT,5-10-1996;** *RULE 1303(a)(1)-BACT,12-6-2002*]	A195.1, D12.5, D12.6, D12.7, D29.5, D29.6, E73.1, E179.1, E179.2, K40.3
STACK, HEIGHT: 80 FT; DIAMETER: 12 FT A/N: 440550 Permit to Construct Issued: 04/05/05	S55	C53			
Process 3 : MATERIAL STORAGE					
System 1 : INORGANIC CHEMICAL STORAGE					
STORAGE TANK, PRESSURIZED, AQUEOUS AMMONIA 19 %, WITH VAPOR LOCK BALANCE RECOVERY SYSTEM, 12000 GALS; DIAMETER: 10 FT 6 IN; LENGTH: 40 FT A/N: 392169 Permit to Construct Issued: 01/31/02	D56				C157.1, E193.1

* (1)(1A)(1B) Denotes RECLAIM emission factor
(2)(2A)(2B) Denotes RECLAIM emission rate
(3) Denotes RECLAIM concentration limit
(4) Denotes BACT emission limit
(5)(5A)(5B) Denotes command and control emission limit
(6) Denotes air toxic control rule limit
(7) Denotes NSR applicability limit
(8)(8A)(8B) Denotes 40 CFR limit(e.g. NSPS, NESHAPS,etc.)
(9) See App B for Emission Limits
(10) See Section J for NESHAP/MACT requirements

** Refer to Section F and G of this permit to determine the monitoring, recordkeeping and reporting requirements for this device.

FACILITY PERMIT TO OPERATE
BURBANK CITY, BURBANK WATER & POWER

SECTION H: DEVICE ID INDEX

The following sub-section provides an index to the devices that make up the facility description sorted by device ID.

FACILITY PERMIT TO OPERATE
BURBANK CITY, BURBANK WATER & POWER

SECTION H: DEVICE ID INDEX

Device Index For Section H			
Device ID	**Section H Page No.**	**Process**	**System**
D50	1	2	1
C52	2	2	1
C53	2	2	1
S55	2	2	1
D56	2	3	1

FACILITY PERMIT TO OPERATE
BURBANK CITY, BURBANK WATER & POWER

SECTION H: PERMIT TO CONSTRUCT AND TEMPORARY PERMIT TO OPERATE

The operator shall comply with the terms and conditions set forth below:

FACILITY CONDITIONS

F9.1 Except for open abrasive blasting operations, the operator shall not discharge into the atmosphere from any single source of emissions whatsoever any air contaminant for a period or periods aggregating more than three minutes in any one hour which is:

(a) As dark or darker in shade as that designated No.1 on the Ringelmann Chart, as published by the United States Bureau of Mines; or

(b) Of such opacity as to obscure an observer's view to a degree equal to or greater than does smoke described in subparagraph (a) of this condition.

[RULE 401, 3-2-1984; RULE 401, 9-11-1998]

F14.1 The operator shall not use diesel fuel containing sulfur compounds in excess of 0.05 percent by weight.

[**RULE 431.2, 5-4-1990**; RULE 431.2, 9-15-2000]

F14.2 The operator shall not use diesel fuel containing sulfur compounds in excess of 15 ppm by weight as supplied by the supplier.

This condition shall become effective on or after June 1, 2004.

[RULE 431.2, 9-15-2000]

F16.1 The operator shall keep records, in a manner approved by the District, for the following parameter(s) or item(s):

Sulfur content of the Natural Gas

[RULE 3004(a)(4)-Periodic Monitoring, 8-11-1995]

FACILITY PERMIT TO OPERATE
BURBANK CITY, BURBANK WATER & POWER

SECTION H: PERMIT TO CONSTRUCT AND TEMPORARY PERMIT TO OPERATE

The operator shall comply with the terms and conditions set forth below:

F18.1 Acid Rain SO2 Allowance Allocation for affected units are as follows:

Device ID	Boiler ID	Contaminant	Tons in any year
17	Olive No. 1	SO2	131
16	Olive No. 2	SO2	25
19	Magnolia No. 4	SO2	37

a). The allowance allocation(s) shall apply to calendar years 2000 through 2009.

b). The number of allowances allocated to Phase II affected units by U.S. EPA may change in a 1998 revision to 40CFR73 Tables 2,3, and 4. In addition, the number of allowances actually held by an affected source in a unit account may differ from the number allocated by U.S. EPA. Neither of the aforementioned conditions necessitate a revision to the unit SO2 allowance allocations identified in this permit (see 40 CFR 72.84)

[40CFR 73 Subpart B, 1-11-1993]

F24.1 Accidental release prevention requirements of Section 112(r)(7):

a). The operator shall comply with the accidental release prevention requirements pursuant to 40 CFR Part 68 and shall submit to the Executive Officer, as a part of an annual compliance certification, a statement that certifies compliance with all of the requirements of 40 CFR Part 68, including the registration and submission of a risk management plan (RMP).

b). The operator shall submit any additional relevant information requested by the Executive Officer or designated agency.

[40CFR 68 - Accidental Release Prevention, 5-24-1996]

DEVICE CONDITIONS

A. Emission Limits

FACILITY PERMIT TO OPERATE
BURBANK CITY, BURBANK WATER & POWER

SECTION H: PERMIT TO CONSTRUCT AND TEMPORARY PERMIT TO OPERATE

The operator shall comply with the terms and conditions set forth below:

A99.3 The 93.6 LBS/MMCF NOX emission limit(s) shall only apply during both the commissioning and interim reporting period to report RECLAIM emissions. The commissioning period shall not exceed 42 hours for the turbine. The interim reporting period shall not exceed 12 months from the initial start-up date.

[RULE 2012, 5-6-2005]

[Devices subject to this condition : D50]

A99.4 The 5 PPM NOX emission limit(s) shall not apply during startup, shutdown or the commissioning period. Startup shall not exceed 1 hr/event & number of startups shall not exceed 1 event/day & 365 events in any one calendar year. Commissioning period shall not exceed 42 operating hrs from initial startup. The operator shall provide the AQMD with written notice of the startup date. Written records of commissioning, startups, & shutdowns shall be maintained & made available upon request from AQMD. The 5 PPM NOx limit shall apply at all other operating times.

[RULE 2005, 2-14-1997]

[Devices subject to this condition : D50]

A99.5 The 6 PPM CO emission limit(s) shall not apply during startup, shutdown or the commissioning period. Startup shall not exceed 1 hr/event & number of startups shall not exceed 1 event/day & 365 events in any one calendar year. Commissioning period shall not exceed 42 operating hrs from initial startup. The operator shall provide the AQMD with written notice of the startup date. Written records of commissioning, startups, & shutdowns shall be maintained & made available upon request from AQMD. The 6 PPM CO limit shall apply at all other operating times.

[RULE 1303(a)(1)-BACT, 5-10-1996; RULE 1303(a)(1)-BACT, 12-6-2002]

[Devices subject to this condition : D50]

FACILITY PERMIT TO OPERATE
BURBANK CITY, BURBANK WATER & POWER

SECTION H: PERMIT TO CONSTRUCT AND TEMPORARY PERMIT TO OPERATE

The operator shall comply with the terms and conditions set forth below:

A195.1 The 5 PPMV NH3 emission limit(s) is averaged over 60 minutes at 15 percent O2 dry. The operator shall calculate and continuously record the NH3 slip concentration using the following: NH3(ppmv)=[a-b*c/1E6]*1E6/b, where a=NH3 injection rate (lb/hr)/17 (lb/lb mole), b=dry exhaust gas flow rate (lb/hr)/29(lb/lb mole), and c=change in measured NOx across the SCR (ppmvd at 15 percent O2). The operator shall install and maintain a NOx analyzer to measure the SCR inlet NOx ppm accurate to within +/- 5 percent calibrated at least once every 12 months.

The operator shall use the method described above or another alternative method approved by the Executive Officer.

The ammonia slip calculation procedures described above shall not be used for compliance determination or emission information determination without corroborative data using an approved reference test method for the determination of ammonia.

[RULE 1303(a)(1)-BACT, 5-10-1996; RULE 1303(a)(1)-BACT, 12-6-2002]

[Devices subject to this condition : C53]

A195.2 The 5 PPMV NOX emission limit(s) is averaged over 1 hour at 15 percent oxygen, dry.

[RULE 2005, 5-6-2005]

[Devices subject to this condition : D50]

A195.3 The 6 PPMV CO emission limit(s) is averaged over 1 hour at 15 percent oxygen, dry.

[RULE 1303(a)(1)-BACT, 5-10-1996; RULE 1303(a)(1)-BACT, 12-6-2002]

[Devices subject to this condition : D50]

A327.1 For the purpose of determining compliance with District Rule 475, combustion contaminant emissions may exceed the concentration limit or the mass emission limit listed, but not both limits at the same time.

[RULE 475, 10-8-1976; RULE 475, 8-7-1978]

[Devices subject to this condition : D50]

C. Throughput or Operating Parameter Limits

FACILITY PERMIT TO OPERATE
BURBANK CITY, BURBANK WATER & POWER

SECTION H: PERMIT TO CONSTRUCT AND TEMPORARY PERMIT TO OPERATE

The operator shall comply with the terms and conditions set forth below:

C1.7 The operator shall limit the operation to no more than 7800 hour(s) in any one year.

The hourly annual limit shall include startup and shutdown events.

[RULE 1303(b)(1)-Modeling, 5-10-1996; RULE 1303(b)(1)-Modeling, 12-6-2002; **RULE 2005, 5-6-2005]**

[Devices subject to this condition : D50]

C157.1 The operator shall install and maintain a pressure relief valve set at 30 psig.

[RULE 1303(a)(1)-BACT, 5-10-1996; RULE 1303(a)(1)-BACT, 12-6-2002]

[Devices subject to this condition : D56]

D. Monitoring/Testing Requirements

D12.5 The operator shall install and maintain a(n) flow meter to accurately indicate the flow rate of the total hourly throughput of injected ammonia. The operator shall continuously record the flow rate with a measuring device or gauge accurate to +/- 5 percent, calibrated once every 12 months.

[RULE 1303(a)(1)-BACT, 5-10-1996; RULE 1303(a)(1)-BACT, 12-6-2002; **RULE 2012, 5-6-2005]**

[Devices subject to this condition : C53]

D12.6 The operator shall install and maintain a(n) temperature gauge to accurately indicate the temperature of the exhaust at the inlet to the SCR reactor. The operator shall continuously record the temperature with a measuring device or gauge accurate to +/- 5 percent, calibrated once every 12 months.

[RULE 1303(a)(1)-BACT, 5-10-1996; RULE 1303(a)(1)-BACT, 12-6-2002; **RULE 2012, 5-6-2005]**

[Devices subject to this condition : C53]

FACILITY PERMIT TO OPERATE
BURBANK CITY, BURBANK WATER & POWER

SECTION H: PERMIT TO CONSTRUCT AND TEMPORARY PERMIT TO OPERATE

The operator shall comply with the terms and conditions set forth below:

D12.7 The operator shall install and maintain a(n) pressure gauge to accurately indicate the differential pressure across the SCR catalyst bed in inches of water column. The operator shall continuously record the pressure with a measuring device or gauge accurate to +/- 5 percent, calibrated once every 12 months.

[RULE 1303(a)(1)-BACT, 5-10-1996; RULE 2012, 12-7-1995; RULE 2012, 3-16-2001]

[Devices subject to this condition : C53]

D12.8 The operator shall install and maintain a(n) measuring device to accurately indicate the water-to-fuel ratio of the turbine.

[RULE 2012, 5-6-2005; 40CFR 60 Subpart GG, 3-6-1981]

[Devices subject to this condition : D50]

FACILITY PERMIT TO OPERATE
BURBANK CITY, BURBANK WATER & POWER

SECTION H: PERMIT TO CONSTRUCT AND TEMPORARY PERMIT TO OPERATE

The operator shall comply with the terms and conditions set forth below:

D29.1 The operator shall conduct source test(s) for the pollutant(s) identified below.

Pollutant(s) to be tested	Required Test Method(s)	Averaging Time	Test Location
CO emissions	District method 100.1	1 hour	Outlet of the SCR
NOX emissions	District method 100.1	1 hour	Outlet of the SCR
PM emissions	Approved District method	District-approved averaging time	Outlet of the SCR
ROG emissions	Approved District method	1 hour	Outlet of the SCR
SOX emissions	Approved District method	District-approved averaging time	Fuel Sample
NH3 emissions	District method 207.1 and 5.3 or EPA method 17	1 hour	Outlet of the SCR

The test shall be conducted after AQMD approval of the source test protocol, but no later than 180 days after initial start-up of the turbines. The AQMD shall be notified of the date and time of the test at least 10 days prior to the test.

The test shall be conducted to determine the oxygen levels in the exhaust. In addition, the test shall measure the fuel flow rate (CFH), the flue gas flow rate, and the turbine generating output (MW).

The test shall be conducted in accordance with a AQMD approved source test protocol. The protocol shall be submitted to the AQMD no later than 45 days before the proposed test date and shall be approved by the AQMD before test commences. The test protocol shall include the proposed operating conditions of the turbine during the test, the identity of the testing lab, a statement from the testing lab certifying that it meets the criteria of R-304, and a description of all sampling and analytical procedures.

The test shall be conducted when this equipment is operating at loads of 100 percent, 75 percent, and 50 percent of maximum load.

[RULE 1303(a)(1)-BACT, 5-10-1996; RULE 1303(a)(1)-BACT, 12-6-2002; **RULE 1303(b)(2)-Offset, 5-10-1996**; RULE 1303(b)(2)-Offset, 12-6-2002; **RULE 2005, 5-6-2005]**

[Devices subject to this condition : D50]

FACILITY PERMIT TO OPERATE
BURBANK CITY, BURBANK WATER & POWER

SECTION H: PERMIT TO CONSTRUCT AND TEMPORARY PERMIT TO OPERATE

The operator shall comply with the terms and conditions set forth below:

D29.4 The operator shall conduct source test(s) for the pollutant(s) identified below.

Pollutant(s) to be tested	Required Test Method(s)	Averaging Time	Test Location
CO emissions	District method 100.1	1 hour	Outlet of the SCR
ROG emissions	Approved District method	1 hour	Outlet of the SCR

The test shall be conducted after AQMD approval of the source test protocol, but no later than 180 days after initial start-up of the turbines. The AQMD shall be notified of the date and time of the test at least 10 days prior to the test.

The test shall be conducted to determine the oxygen levels in the exhaust. In addition, the test shall measure the fuel flow rate (CFH), the flue gas flow rate, and the turbine generating output (MW).

The test shall be conducted in accordance with a AQMD approved source test protocol. The protocol shall be submitted to the AQMD no later than 45 days before the proposed test date and shall be approved by the AQMD before test commences. The test protocol shall include the proposed operating conditions of the turbine during the test, the identity of the testing lab, a statement from the testing lab certifying that it meets the criteria of R-304, and a description of all sampling and analytical procedures.

The test shall be conducted to demonstrate compliance with the Rule 1303 concentration limit.

The test shall be conducted when this equipment is operating at loads of 100 percent, 75 percent, and 50 percent of maximum load.

[RULE 1303(a)(1)-BACT, 5-10-1996; RULE 1303(a)(1)-BACT, 12-6-2002; **RULE 1303(b)(2)-Offset, 5-10-1996**; RULE 1303(b)(2)-Offset, 12-6-2002]

[Devices subject to this condition : C52]

FACILITY PERMIT TO OPERATE
BURBANK CITY, BURBANK WATER & POWER

SECTION H: PERMIT TO CONSTRUCT AND TEMPORARY PERMIT TO OPERATE

The operator shall comply with the terms and conditions set forth below:

D29.5 The operator shall conduct source test(s) for the pollutant(s) identified below.

Pollutant(s) to be tested	Required Test Method(s)	Averaging Time	Test Location
NH3 emissions	District method 207.1 and 5.3 or EPA method 17	1 hour	Outlet of the SCR

The test shall be conducted at least quarterly during the first twelve months after initial commissioning of the new SCR catalyst and at least annually thereafter, when the equipment is operating at 80 percent load or greater. The NOx concentration, as determined by the CEMS, shall be simultaneously recorded during the ammonia slip test. If the CEMS is inoperable, a test shall be conducted to determine the NOx emissions using District Method 100.1 measured over a 60 minute averaging time period.

The test shall be conducted and the results submitted to the AQMD within 60 days after the test date. The AQMD shall be notified of the date and time of the test at least 7 days prior to the test.

The test shall be conducted to demonstrate compliance with the Rule 1303 concentration limit.

[**RULE 1303(a)(1)-BACT, 5-10-1996**; RULE 1303(a)(1)-BACT, 12-6-2002]

[Devices subject to this condition : C53]

FACILITY PERMIT TO OPERATE
BURBANK CITY, BURBANK WATER & POWER

SECTION H: PERMIT TO CONSTRUCT AND TEMPORARY PERMIT TO OPERATE

The operator shall comply with the terms and conditions set forth below:

D29.6 The operator shall conduct source test(s) for the pollutant(s) identified below.

Pollutant(s) to be tested	Required Test Method(s)	Averaging Time	Test Location
NOX emissions	District method 100.1	1 hour	Outlet of the SCR
NH3 emissions	Approved District method	1 hour	Outlet of the SCR

The test shall be conducted after AQMD approval of the source test protocol, but no later than 180 days after initial commissioning of the new SCR catalyst. The AQMD shall be notified of the date and time of the test at least 10 days prior to the test.

The test shall be conducted to determine the oxygen levels in the exhaust. In addition, the test shall measure the fuel flow rate (CFH), the flue gas flow rate, and the turbine generating output (MW).

The test shall be conducted in accordance with a AQMD approved source test protocol. The protocol shall be submitted to the AQMD no later than 45 days before the proposed test date and shall be approved by the AQMD before test commences. The test protocol shall include the proposed operating conditions of the turbine during the test, the identity of the testing lab, a statement from the testing lab certifying that it meets the criteria of R-304, and a description of all sampling and analytical procedures.

The test shall be conducted to demonstrate compliance with the BACT concentration limits for NOx and NH3.

The test shall be conducted with ammonia injection when this equipment is operating at loads of 100 percent, 75 percent, and 50 percent of maximum load, and the minimum load at which ammonia injection occurs during the NH3 tests.

[RULE 1303(a)(1)-BACT, 5-10-1996; RULE 1303(a)(1)-BACT, 12-6-2002; **RULE 1303(b)(2)-Offset, 5-10-1996**; RULE 1303(b)(2)-Offset, 12-6-2002]

[Devices subject to this condition : C53]

FACILITY PERMIT TO OPERATE
BURBANK CITY, BURBANK WATER & POWER

SECTION H: PERMIT TO CONSTRUCT AND TEMPORARY PERMIT TO OPERATE

The operator shall comply with the terms and conditions set forth below:

D82.1 The operator shall install and maintain a CEMS to measure the following parameters:

NOX concentration in ppmv

The CEMS shall be installed and operating no later than 12 months after the initial start-up of the turbine. During the interim period between the initial start-up and the provisional certification date of the CEMS, the operator shall comply with the monitoring requirements of Rule 2012(h)(2) and 2012(h)(3). Within 2 weeks of the turbine start-up date, the operator shall provide written notification to the District of the exact date of start-up.

[RULE 2012, 5-6-2005]

[Devices subject to this condition : D50]

D82.2 The operator shall install and maintain a CEMS to measure the following parameters:

CO concentration in ppmv

Concentrations shall be corrected to 15 percent oxygen on a dry basis.

The CEMS will convert the actual CO concentrations to mass emission rates (lbs/hr) and record the hourly emission rates on a continuous basis.

The CEMS shall be installed and operated, in accordance with an AQMD approved Rule 218 CEMS plan application. The operator shall not install the CEMS prior to receiving initial approval from AQMD.

The CEMS shall be installed and operated to measure CO concentration over a 15 minute averaging time period.

[RULE 1303(a)(1)-BACT, 5-10-1996; RULE 1303(a)(1)-BACT, 12-6-2002; **RULE 218, 8-7-1981**; RULE 218, 5-14-1999]

[Devices subject to this condition : D50]

E. Equipment Operation/Construction Requirements

FACILITY PERMIT TO OPERATE
BURBANK CITY, BURBANK WATER & POWER

SECTION H: PERMIT TO CONSTRUCT AND TEMPORARY PERMIT TO OPERATE

The operator shall comply with the terms and conditions set forth below:

E57.6 The operator shall vent this equipment to the SCR and CO control catalysts whenever the turbine is in operation.

[RULE 2005, 5-6-2005]

[Devices subject to this condition : D50]

E73.1 Notwithstanding the requirements of Section E conditions, the operator may, at his discretion, choose not to use ammonia injection if all of the following requirement(s) are met:

The SCR inlet exhaust temperature is 500 degrees F or less, not to exceed 1 hour during start-ups.

[RULE 1303(a)(1)-BACT, 5-10-1996; RULE 1303(a)(1)-BACT, 12-6-2002; **RULE 2005, 5-6-2005]**

[Devices subject to this condition : C53]

E179.1 For the purpose of the following condition number(s), continuously record shall be defined as measuring at least once every hour, and shall be based upon the average of the continuous monitoring for that hour.

Condition Number D 12- 5

Condition Number D 12- 6

Condition Number A 195- 1

Condition Number C 1- 8

[RULE 1303(a)(1)-BACT, 5-10-1996; RULE 1303(a)(1)-BACT, 12-6-2002; **RULE 2012, 5-6-2005]**

[Devices subject to this condition : C53]

E179.2 For the purpose of the following condition number(s), continuously record shall be defined as measuring at least once every month, and shall be based upon the average of the continuous monitoring for that month.

Condition Number D 12- 7

[RULE 2012, 5-6-2005]

[Devices subject to this condition : C53]

FACILITY PERMIT TO OPERATE
BURBANK CITY, BURBANK WATER & POWER

SECTION H: PERMIT TO CONSTRUCT AND TEMPORARY PERMIT TO OPERATE

The operator shall comply with the terms and conditions set forth below:

E193.1 The operator shall construct this equipment according to the following specifications:

The onsite storage tank will be bermed to contain 110 percent of the contents of the tank, to prevent offsite migration and consequences in the event of a tank rupture.

A containment system will be used during off-loading operations. The containment system will capture the entire capacity of a tanker truck release.

[CA PRC CEQA, 11-23-1970]

[Devices subject to this condition : D56]

I. Administrative

I296.1 This equipment shall not be operated unless the operator demonstrates to the Executive Officer that the facility holds sufficient RTCs to offset the prorated annual emissions increase for the first compliance year of operation. In addition, this equipment shall not be operated unless the operator demonstrates to the Executive Officer that, at the commencement of each compliance year after the first compliance year of operation, the facility holds sufficient RTCs in an amount equal to the annual emissions increase.

[RULE 2005, 5-6-2005]

[Devices subject to this condition : D50]

K. Record Keeping/Reporting

FACILITY PERMIT TO OPERATE
BURBANK CITY, BURBANK WATER & POWER

SECTION H: PERMIT TO CONSTRUCT AND TEMPORARY PERMIT TO OPERATE

The operator shall comply with the terms and conditions set forth below:

K40.3 The operator shall provide to the District a source test report in accordance with the following specifications:

Source test results shall be submitted to the District no later than 60 days after the source test was conducted.

Emission data shall be expressed in terms of concentration (ppmv), corrected to 15 percent oxygen, dry basis.

All exhaust flow rate shall be expressed in terms of dry standard cubic feet per minute (DSCFM) and dry actual cubic feet per minute (DACFM).

All moisture concentration shall be expressed in terms of percent corrected to 15 percent oxygen.

Emission data shall be expressed in terms of mass rate (lbs/hr). In addition, solid PM emissions, if required to be tested, shall also be reported in terms of grains per DSCF.

Emission data shall be expressed in terms of lbs/MM cubic feet.

Source test results shall also include turbine fuel flow rate under which the test was conducted.

Source test results shall also include turbine and generator output under which the test was conducted.

[RULE 1303(a)(1)-BACT, 5-10-1996; RULE 1303(a)(1)-BACT, 12-6-2002; **RULE 1303(b)(2)-Offset, 5-10-1996**; RULE 1303(b)(2)-Offset, 12-6-2002; **RULE 2005, 5-6-2005]**

[Devices subject to this condition : C52, C53]

K67.6 The operator shall keep records, in a manner approved by the District, for the following parameter(s) or item(s):

Natural Gas usage after the CEMS certification.

Natural Gas usage during the commissioning period.

Natural Gas usage after the commissioning period and prior to CEMS certification.

[RULE 2012, 5-6-2005]

[Devices subject to this condition : D50]

SOUTH COAST AIR QUALITY MANAGEMENT DISTRICT	PAGES 19	PAGE 1
ENGINEERING DIVISION	APPL. NO. 467881/2	DATE 2/7/2008
APPLICATION PROCESSING AND CALCULATIONS	PROCESSED BY CGP	CHECKED BY

PERMIT TO OPERATE EVALUATION

APPLICANT:
Burbank City, Burbank Water and Power
164 W. Magnolia Blvd
Burbank, CA 91502

EQUIPMENT LOCATION:
164 Magnolia Blvd
Burbank, CA 91502

EQUIPMENT DESCRIPTION:

Section D of the Reclaim Permit ID# 25638

Equipment	ID No.	Connected To	RECLAIM Source Type/ Monitoring Unit	Emissions and Requirements	Conditions
PROCESS 1: EXTERNAL COMBUSTION					
SYSTEM 1: POWER GENERATION					
BOILER, OLIVE NO. 1, NATURAL GAS, RILEY STOKER, WITH LO NOX BURNER, 551.84 MMBTU/HR WITH A/N: ~~397658~~ **467882** BURNER, NATURAL GAS, AUS MODEL DFL-815, SIX BURNERS, WITH LOW NOX BURNER, 551.84 MMBTU/HR GENERATOR, 44 MW	D17	~~C31~~ C58	NOX: MAJOR SOURCE	CO: 2000 PPMV (5) [RULE 407, 4-2-1982] ; NOX: 148. 67 LBS/MMSCF NATURAL GAS (1) [RULE 2012, 12-7-1995;RULE 2012, 5-11-2001] NOX: 5 PPMV NATURAL GAS (5) [RULE 2009, 5-11-2001] ; PM: 0. 1 GRAINS/SCF (5) [RULE 409, 8-7-1981] ; SO2: (9) [40CFR 72 - Acid Rain Provisions, 11-24-1997]	A99.1, A99.2, A99.6, A195.4, ~~D29.3~~, ~~D425.1~~, E57.3, E193.3, I331.1, ~~K40.1~~, ~~K40.2~~
SELECTIVE CATALYTIC REDUCTION, HALDOR TOPSOE A/S, 719.11 CU FT., WIDTH: 24 FT; HEIGHT: 7 FT 10 IN; LENGTH: 4 FT 10	C58	D17		NH3: 10 PPMV NATURAL GAS (4) [RULE 1303 BACT]	A195.5, D12.5, D12.6, D12.7, D29.2, E73.2,

Equipment	ID No.	Connected To	RECLAIM Source Type/ Monitoring Unit	Emissions and Requirements	Conditions
PROCESS 1: EXTERNAL COMBUSTION					
IN, WITH A/N: 397663 AMMONIA INJECTION GRID					E179.1, E179.2, E193.3 ~~K40.2~~
~~CYCLONE, GREEN AREODYNE, TYPE G, SIZE 16-22~~ ~~A/N: G00399~~	~~C31~~	~~D17~~			
BOILER, OLIVE NO. 2, NATURAL GAS, RILEY STOKER, S/N 3454, WITH SIX RILEY GAS BURNERS, 604.7 MMBTU/HR A/N: ~~397660~~ **467881** **GENERATOR, 55 MW**	D16	D62 C63	NOX: MAJOR SOURCE	CO: 2000 PPMV (5) [RULE 407, 4-2-1982] ; NOX: 148. 67 LBS/MMSCF NATURAL GAS (1) [RULE 2012, 12-7-1995;RULE 2012, 5-11-2001] NOX: 5 PPMV NATURAL GAS (5) [RULE 2009, 5-11-2001] ; PM: 0. 1 GRAINS/SCF (5) [RULE 409, 8-7-1981] ; SO2: (9) [40CFR 72 - Acid Rain Provisions, 11-24-1997]	A99.1, A99.6, A195.4, C1.8, ~~D29.3~~, ~~D425.1~~, E179.1, E193.3, ~~I331.1~~
~~BURNER, AIR PREHEAT, NATURAL GAS, ECLIPSE COMBUSTION, MODEL 63FFB-DP, 63 MMBTU/HR~~ ~~A/N: 397660~~	~~D62~~	~~D16~~	~~NOX: MAJOR SOURCE~~	~~CO: 2000 PPMV (5) [RULE 407, 4-2-1982] ; NOX: 148. 67 LBS/MMSCF NATURAL GAS (1) [RULE 2012, 12-7-1995;RULE 2012, 5-11-2001] NOX: 5 PPMV NATURAL GAS (4) [RULE 2009, 5-11-2001] ; PM: 0. 1 GRAINS/SCF (5) [RULE 409, 8-7-1981] ; SO2: (9) [40CFR 72 - Acid Rain Provisions, 11-24-1997]~~	~~A99.6, A99.7, A195.4, C1.8, D29.3, E179.1, E193.3~~
SELECTIVE CATALYTIC REDUCTION, HALDOR TOPSOE A/S, 920.18 CU. FT, WIDTH: 24 FT 4.5 IN; HEIGHT: 13 FT 3.25 IN; LENGTH: 4 FT 6 IN WITH A/N: 397644 AMMONIA INJECTION GRID	C63	D16		NH3: 10 PPM NATURAL GAS	A195.5, D12.5, D12.6, D12.7, D29.2, E73.2, E179.1, E179.2, E193.3 ~~K40.2~~
~~PROCESS 4: COATING OPERATIONS~~					
~~SPRAY COATING OPERATION, WITH FABRIC FILTER, SPRAY~~	~~D27~~			~~PM: (9) [RULE 404, 2-7-1986] [RULE 1107, 5-12-1995;RULE 1107, 8-14-1998;RULE 1151,~~	~~C1.4, C1.5, C6.1, D12.2, D322.1,~~

Equipment	ID No.	Connected To	RECLAIM Source Type/ Monitoring Unit	Emissions and Requirements	Conditions
~~PROCESS 1: EXTERNAL COMBUSTION~~					
~~BOOTH A/N: G01980~~				~~12-9-1994;RULE 1151, 12-11-1998 RULE 1171, 5-12-1995; RULE 1171, 6-13-1997]~~	~~E57.1, H23.4, K67.2~~
~~SPRAY COATING OPERATION, WITH WATER CURTAIN A/N: G01403~~	~~D28~~			~~PM: (9) [RULE 404, 2-7-1986] [RULE 1107, 5-12-1995;RULE 1107, 8-14-1998; RULE 1171, 5-12-1995; RULE 1171, 6-13-1997]~~	~~C1.5, H23.4~~
~~PROCESS 6: VAPOR EXTRACTION AND TREATMENT~~					
~~VAPOR EXTRACTION WELL, WITH A/N: 322491 BLOWER, 100 CU. FT./MIN~~	~~D44~~	~~C42~~			~~C6.2, D12.4, E175.1, K67.3~~
~~CARBON ADSORBER, CONNECTED IN SERIES WITH C43, 200 LBS A/N: 322491~~	~~C42~~	~~C43 D44~~		~~VOC: 1 PPM (4) [RULE 1303 BACT]~~	~~C6.2, D12.4, D28.1, E128.1, E175.1, K67.3~~
~~CARBON ADSORBER, CONNECTED IN SERIES WITH C42, 200 LBS A/N: 322491~~	~~C43~~	~~C42~~		~~VOC: 1 PPM (4) [RULE 1303 BACT]~~	~~C6.2, D12.4, D28.1, E128.1, E175.1, K67.3~~

COMPLIANCE HISTORY:

The facility has received 2 NOVs and 1 NC since 2005, two of the violations pertain to the boilers. Following is a summary:

Notice #	Violation Date	Description
P11637	2/3/05	Gas turbine Lake 1 exceeded ammonia slip limit
P46843	3/20/06	Boiler Olive 1 exceeded 5 ppm NOx limit
C98694	5/17/07	Facility must install dedicated fuel meter on preheat burner and report NOx emissions separately from boiler Olive 2

BACKGROUND:

City of Burbank submitted 3 applications to request changes to their Reclaim permit under ID#25638. The applications are listed in the following table:

A/N	Equipment	Application Type
467881	Boiler #2 D16	Modification
467882	Boiler #1 D17	Modification, No Engineering Evaluation
467883	None	Title V Minor Revision

PROCESS DESCRIPTION:

The facility is requesting the following changes be made to their permit:

Equipment	Requested Change
Boiler #1	Delete connection to C31 cyclone, which is no longer used.
Boiler #2	Remove the air preheat burner, which is no longer used and not needed with the addition of the SCR.
Vapor Extraction System	Delete vapor extraction well (D44) and 2 carbon canisters (C42, C43) which are no longer used.
Coating Operation	Delete the 2 spray coating booths (D27, D28) which are no longer used.
Boiler 1&2 SCRs	Issue final Permit to Operate

The cyclone connected to Boiler #1 was used in the past when the equipment fired fuel oil. Since fuel oil is no longer used, the cyclone is not needed.

The vapor extraction and coating equipment is no longer used, and can therefore be removed from the permit.

In 2003, Burbank added an SCR and a preheat burner to Boiler #2 as part of the air pollution control strategy for the boiler to comply with Rule 2009 limits. They had originally proposed an FGR system in conjunction with an SCR, but later modified their proposal to the preheat burner and SCR. The preheat burner acts to increase the temperature of the combustion air to about 600 degrees F, thus reducing start up time. Additionally, the oxygen depleted exhaust gas from the burner will be used as combustion air for the boiler, which reduces available O2 in the combustion zone, thereby reducing NOx formation. The preheat burner is rated at 63 mmbtu/hr. The current application requests that the permit clarify that the total heat input to Boiler #2 will not exceed the permitted level of 604.70 mmbtu/hr, which the facility controls by monitoring the fuel input (reference A/N 397660). A condition will be added to the boiler limiting the total heat input to 604.70 mmbtu/hr.

Source Test Results

After installation of the SCRs in 2003, the units were stack tested. The test results were reviewed and deemed acceptable by AQMD source testing staff. Following is a summary of the results:

Olive Unit #1 (test dates 6/9/03& 6/10/03)

Pollutant	Ammonia Injection On	Ammonia Injection Off
25% Load		
NOx ppm @ 3%	3.66	80.12
CO ppm @ 3%	<32	<32
50% Load		
NOx ppm @ 3%	3.75	73.54
CO ppm @ 3%	<25	<24
75% Load		
NOx ppm @ 3%	3.89	72.63
CO ppm @ 3%	<22	<21
100% Load		
NOx ppm @ 3%	3.96	90.98
CO ppm @ 3%	<21	<20

Olive Unit #2 (test dates 9/9/03 & 9/10/03)

Pollutant	Ammonia Injection On	Ammonia Injection Off
Minimum Load		
NOx ppm @ 3%	4.24	82.4
CO ppm @ 3%	<42.0	<44.3
50% Load		
NOx ppm @ 3%	4.03	75.1
CO ppm @ 3%	<22.6	<22.9
75% Load		
NOx ppm @ 3%	4.45	80.3
CO ppm @ 3%	<19.5	<19.7
100% Load		
NOx ppm @ 3%	4.21	94.0
CO ppm @ 3%	<19.1	<19.3

The test results verify that the units can achieve the BARCT limits with the use of the SCRs.

Burbank was asked to submit NOx CEMS data to show that Olive #2 can still meet the 5 ppm NOx limits without the preheat burner. The facility stated that there is limited data for the unit since is does not operate very often. However, they were able to submit data

for the periods between 12/4/05-12/8/05 and 1/6/06-1/8/06. This data showed that except during start up and shutdown, the unit met the 5 ppm NOx limit. The data is included in the file for reference.

EMISSIONS:

There are no emission changes as a result of the removal of the cyclone on Olive #1 and the removal of the preheat burner on Olive #2. Therefore, emissions can be taken from the previous files, and are as follows:

Boiler #1 (previous A/N 397660)

Pollutant	Maximum Uncontrolled		Maximum Controlled		30 Day Ave	Annual
	lb/hr	lb/day	lb/hr	lb/day	lb/day	lb/yr
NOx (Olive 1)	80.63	1935.18	3.35	80.40	80	29348
CO	44.15	1059.61	44.15	1059.61	1060	386758
PM10	3.99	95.87	4.04	96.85	97	35351
ROG	2.89	69.38	2.89	69.38	69	25323
SOx	0.32	7.57	0.30	7.09	7	2588
NH3	0	0.00	2.476	59.43	59	21691

Boiler #2 (previous A/N 397658)

Pollutant	Maximum Uncontrolled		Maximum Controlled		30 Day Ave	Annual
	lb/hr	lb/day	lb/hr	lb/day	lb/day	lb/yr
NOx (Olive 2)	92.86	2228.73	3.67	88.10	88	32156
CO	48.38	1161.01	48.38	1161.01	1161	423770
PM10	4.38	105.04	4.38	105.11	105	38366
ROG	3.17	76.02	3.17	76.02	76	27747
SOx	0.35	8.29	0.34	8.27	8	3017
NH3	0	0	2.71	65.11	65	23766

EVALUATION:

Rule 401 – Visible Emissions

Visible emissions are not expected under normal operation of the boilers. There have been no complaints of visible emissions on this equipment in at least the past 2 years.

Rule 402 -Nuisance

Nuisance problems are not expected from operation of the boielrs, and there is no history of nuisance problems with this equipment.

Rule 407 – Liquid and Gaseous Air Contaminants
This rule sets the CO limit to 2000 ppm. The stack tests on the boilers show they are well below this limit. Continued compliance is expected.

Rule 409 – Combustion Contaminants
This rule limits the particulate matter emissions from the boilers to 0.1 gr/scf. The boilers are expected to comply based on the following calculations:

Olive 1

PM emission rate = 3.99 lbs/hr.
Conversion factor to grains = 7000 gr/lb
Fuel F-factor = 8710 scf/mmbtu @ 0% O2
Conversion factor to 3% O2 = (20.9/20.9-3) = 1.17

Exhaust flow calculation:

551.84 mmbtu/hr (8710 scf/mmbtu) (1.17) = 5.62 mmscf/hr

Grain loading calculation:

(3.99 lbs/hr X 7000 gr/lb)/(5.62 mmscf/hr) = 0.005 gr/scf

Olive 2

PM emission rate = 4.38 lbs/hr.
Conversion factor to grains = 7000 gr/lb
Fuel F-factor = 8710 scf/mmbtu @ 0% O2
Conversion factor to 3% O2 = (20.9/20.9-3) = 1.17

Exhaust flow calculation:

604.7 mmbtu/hr (8710 scf/mmbtu) (1.17) = 6.16 mmscf/hr

Grain loading calculation:

(4.38 lbs/hr X 7000 gr/lb)/(6.16 mmscf/hr) = 0.005 gr/scf

Rule 431.1 – Sulfur Content of Gaseous Fuels
This rule limits the natural gas fired in the boilers to 16 ppm SO2. The boilers use pipeline natural gas supplied by the Gas Company, which typically is well below 16 ppm SO2. Compliance is expected.

Regulation XIII – New Source Review
At the time the Permit to Construct was issued, a BACT limit of 10 ppm NH3 slip was set for each boiler. The results of the stack testing show the equipment can meet this limit.

Rule 2009 – Compliance Plans for Power Producing Facilities
This rule set a 5 ppm NOx limit (1 hour average) for Olive 1 and 2 as BARCT (Best Available Retrofit Control Technology). The stack testing on the boilers show that they can meet the limit. Even though Olive #1 exceeded the limit in March of 2006, it appears that was an isolated incident and there haven't been any other violations since. Continued compliance is expected.

Rule 2012 – NOx RECLAIM
This rule requires the boilers, as NOx major sources, to install a CEMS, record NOx, and report daily NOx mass emissions electronically to AQMD. The CEMS must include a NOx and O2 analyzer, a fuel meter and a data handling and storage device. Also, the rule requires that operating data on the SCRs be recorded, such as ammonia injection rate, exhaust temperature prior to the SCR, and pressure drop across the SCR catalyst bed. The facility has provided this equipment and is currently in compliance with the requirements of this rule.

RECOMMENDATION:

Issue a revised Reclaim permit, moving Boilers 1 and 2 and their respective SCRs into Section D. The initial testing conditions can be removed, all other conditions remain the same. Note that for the vapor extraction equipment and the spray booths, all associated conditions will be removed.

CONDITIONS:

Olive #1

A99.1 The 148.67 lbs/mmcf NOx emission limit(s) shall only apply during hot standby operations when burning natural gas.
[Rule 2012]
[Devices subject to this condition: D17]

A99.6 The 5 ppmv NOx emission limit shall not apply during startups and shutdowns and/or when the boiler exhaust prior to the SCR catalyst is less than 410 Deg. F.
[Rule 2009]
[Devices subject to this condition: D16, D17]

A195.4 The 5 ppmv NOx emission limit is averaged over 60 minutes at 3 percent oxygen, dry.
[Rule 2009]
[Devices subject to this condition: D16, D17]

~~D29.3 The operator shall conduct source tests for the pollutants identified below:~~

~~Pollutants~~	~~Required Test Method~~	~~Averaging Time~~	~~Test Location~~
~~NOx~~	~~District Method 100.1~~	~~1 hour~~	~~Outlet of the SCR~~
~~NH3~~	~~District Method 5.3 and 207.1 or EPA Method 17~~	~~1 hour~~	~~Outlet of the SCR~~

~~The test shall be conducted to determine the oxygen levels in the exhaust. In addition, the test shall measure the fuel flow rate (CFH), the flue gas flow rate, and the generator output (MW).~~

~~The test shall be conducted in accordance with an AQMD approved source test protocol. The protocol shall be submitted to the AQMD permitting engineer no later than 45 days before the proposed test date, and shall be approved by the AQMD before the test commences. The test protocol shall include the proposed operating conditions of the boilers during the tests, the identity of the testing lab, a statement from the testing lab certifying it meets the criteria of R304, and a description of all sampling and analytical procedures.~~

~~The tests shall be conducted with and without ammonia injection when this equipment is operating at loads of 100, 75, and 50 percent, and the minimum load at which ammonia injection occurs during the NOx test.~~

~~The test shall be conducted with ammonia injection when this equipment is operating at loads of 100, 75, 50 percent, and the minimum load at which ammonia injection occurs during the NH3 tests.~~

~~The test shall be conducted within 60 days after achieving maximum production rate, but no later than 180 days after initial start up.~~
~~[Rule 1303 BACT, Rule 2009]~~

~~[Devices subject to this condition: D16, D17]~~

~~D425.1 The operator shall have the existing NOx CEMS monitoring this device reevaluated by the District by submitting a CEMS application. If recertification is necessary, the operator shall have the existing CEMS monitoring this device recertified within 90 days of the start-up of the modification of this device. If the CEMS is not recertified within 90 days of start-up of this device, the facility permit holder shall calculate and report NOx emissions in accordance with Rule 2012, Appendix A, Chapter 2, Paragraph (B)(16).~~
~~[RULE 2012, 12-7-1995; RULE 2012, 5-11-2001]~~
~~[Devices subject to this condition : D16, D17]~~

E57.3 The operator shall vent this equipment to air pollution control equipment which is in full operation and has been issued a permit by the executive officer whenever soot-blowing operations are taking place.
[RULE 401, 3-2-1984; RULE 401, 9-11-1998]
[Devices subject to this condition : D17]

E193.3 The operator shall upon completion of construction, operate and maintain this equipment according to the following specifications:

In compliance with all mitigation measures as stipulated in the Mitigated Negative Declaration Resolution No. 26,245, dated May 28, 2002, pertaining to the Burbank Water and Power SCR project.

[CA PRC CEQA]
[Devices subject to this condition: D17, C58]

~~I331.1 The conditions and requirements for this device in Section H shall take effect, and shall supersede those in Section D, when the modifications authorized in Section H are completed. The operator shall notify the AQMD when the modifications are completed.~~
~~[Rule 202]~~
~~[Devices subject to this condition: D17, D18, D19]~~

~~K40.1 The operator shall provide to the District a source test report in accordance with the following specifications:~~

~~Source test results shall be submitted to the District no later than 180 days after the source test was conducted.~~

~~Source test results shall also include fuel flow rate, flue gas flow rate and net boiler and steam turbine electric generator output in MW under which the test was conducted.~~

~~[Rule 1303, 2012]~~

~~[Devices subject to this condition: D17]~~

~~K40.2 The operator shall provide to the District a source test report in accordance with the following specifications:~~

~~All exhaust flow rate shall be expressed in terms of dry standard cubic feet per minute (DSCFM) and dry actual cubic feet per minute (DACFM).~~

~~Source test results shall be submitted to the District no later than 180 days after the source test was conducted.~~

~~Source test results shall also include fuel flow rate (CFH), generator output in MW, and percent of total stack flow under which the test was conducted.~~

~~All moisture concentration shall be expressed in terms of percent corrected to 3 percent oxygen.~~

~~Emission data shall be expressed in terms of concentration (ppmv), corrected to 3 percent oxygen, dry basis.~~

~~Emission data shall be expressed in terms of mass rate (lbs/hr). In addition, solid PM emissions, if required to be tested, shall also be reported in terms of grains per DSCF.~~

~~Emission data shall be expressed in terms of lbs/MM cubic feet.~~

~~[RULE 1303(a)(1) BACT, 5-10-1996; RULE 1303(b)(2) O set, 5-10-1996; RULE 407, 4-2-1982; RULE 409, 8-7-1981]~~

~~[Devices subject to this condition : D17]~~

Olive #2

A99.1 The 148.67 lbs/mmcf NOx emission limit(s) shall only apply during hot standby operations when burning natural gas.

[Rule 2012]

[Devices subject to this condition: D16]

A99.6 The 5 ppmv NOx emission limit shall not apply during startups and shutdowns and/or when the boiler exhaust prior to the SCR catalyst is less than 410 Deg. F.

[Rule 2009]

[Devices subject to this condition: D16, D17]

A195.4 The 5 ppmv NOx emission limit is averaged over 60 minutes at 3 percent oxygen, dry.

[Rule 2009]

[Devices subject to this condition: D16, D17]

~~D29.3 The operator shall conduct source tests for the pollutants identified below:~~

~~Pollutants~~	~~Required Test Method~~	~~Averaging Time~~	~~Test Location~~
~~NOx~~	~~District Method 100.1~~	~~1 hour~~	~~Outlet of the SCR~~
~~NH3~~	~~District Method 5.3 and 207.1 or EPA Method 17~~	~~1 hour~~	~~Outlet of the SCR~~

~~The test shall be conducted to determine the oxygen levels in the exhaust. In addition, the test shall measure the fuel flow rate (CFH), the flue gas flow rate, and the generator output (MW).~~

~~The test shall be conducted in accordance with an AQMD approved source test protocol. The protocol shall be submitted to the AQMD permitting engineer no later than 45 days before the proposed test date, and shall be approved by the AQMD before the test commences. The test protocol shall include the proposed operating conditions of the boilers during the tests, the identity of the testing lab, a statement from the testing lab certifying it meets the criteria of R304, and a description of all sampling and analytical procedures.~~

~~The tests shall be conducted with and without ammonia injection when this equipment is operating at loads of 100, 75, and 50 percent, and the minimum load at which ammonia injection occurs during the NOx test.~~

~~The test shall be conducted with ammonia injection when this equipment is operating at loads of 100, 75, 50 percent, and the minimum load at which ammonia injection occurs during the NH3 tests.~~

~~The test shall be conducted within 60 days after achieving maximum production rate, but no later than 180 days after initial start up.~~

~~[Rule 1303 BACT, Rule 2009]~~

~~[Devices subject to this condition: D16, D17]~~

~~D425.1 The operator shall have the existing NOx CEMS monitoring this device reevaluated by the District by submitting a CEMS application. If recerti cation is~~

~~necessary, the operator shall have the existing CEMS monitoring this device recertified within 90 days of the start up of the modification of this device. If the CEMS is not recertified within 90 days of start up of this device, the facility permit holder shall calculate and report NOx emissions in accordance with Rule 2012, Appendix A, Chapter 2, Paragraph (B)(16).~~
~~[RULE 2012, 12-7-1995; RULE 2012, 5-11-2001]~~
~~[Devices subject to this condition : D16, D17]~~

E179.1 For the purpose of the following condition number(s), continuously record shall be defined as measuring at least once every hour, and shall be based upon the average of the continuous monitoring for that hour.

Condition Number D 12- 5
Condition Number D 12- 6
Condition Number A 195- 1
Condition Number C 1- 8
[RULE 1303(a)(1)-BACT, 5-10-1996; RULE 2012, 12-7-1995; RULE 2012, 3-16-2001]
[Devices subject to this condition : D16, C53, C58, D62, C63]

E193.3 The operator shall construct, operate, and maintain this equipment according to the following specifications:

In compliance with all mitigation measures as stipulated in the Mitigated Negative Declaration Resolution No. 26,245, dated May 28, 2002, pertaining to the Burbank Water and Power SCR project.
[CA PRC CEQA, 11-23-1970]
[Devices subject to this condition : D16, D17, C58, D62, C63]

~~I331.1 The conditions and requirements for this device in Section H shall take effect, and shall supersede those in Section D, when the modifications authorized in Section H are completed. The operator shall notify the AQMD when the modifications are completed.~~
~~[Rule 202]~~
~~[Devices subject to this condition: D17, D18, D19]~~

SCR's #1 & #2

A195.5 The 10 PPMV NH3 emission limit(s) is averaged over 60 minutes at 3 percent O2 dry. The operator shall calculate and continuously record the NH3 slip concentration using the following: NH3(ppmv)= [a- b*c/1E6]*1E6/b, where a= NH3 injection rate

(lb/hr)/17 (lb/lb/mole), b= dry exhaust gas ow rate (lb/hr)/29(lb/lb/mole), and c= change in measured NOx across the SCR (ppmvd at 3 percent O2). The operator shall install and maintain a NOx analyzer to measure the SCR inlet NOx ppm accurate to within + /- 5 percent calibrated at least once every 12 months.

The operator shall use the method described above or another alternative method approved by the Executive Officer.

The ammonia slip calculation procedures described above shall not be used for compliance determination or emission information determination without corroborative data using an approved reference test method for the determination of ammonia.
[RULE 1303(a)(1)-BACT, 5-10-1996]
[Devices subject to this condition : C58, C63]

D12.5 The operator shall install and maintain a(n) flow meter to accurately indicate the flow rate of the total hourly throughput of injected ammonia. The operator shall continuously record the flow rate with a measuring device or gauge accurate to + /- 5 percent, calibrated once every 12 months.
[RULE 1303(a)(1)-BACT, 5-10-1996; RULE 2012, 12-7-1995; RULE 2012, 3-16-2001]
[Devices subject to this condition : C53, C58, C63]

D12.6 The operator shall install and maintain a(n) temperature gauge to accurately indicate the temperature of the exhaust at the inlet to the SCR reactor. The operator shall continuously record the temperature with a measuring device or gauge accurate to + /- 5 percent, calibrated once every 12 months.
[RULE 1303(a)(1)-BACT, 5-10-1996; RULE 2012, 12-7-1995; RULE 2012, 3-16-2001]
[Devices subject to this condition : C53, C58, C63]

D12.7 The operator shall install and maintain a(n) pressure gauge to accurately indicate the differential pressure across the SCR catalyst bed in inches of water column. The operator shall continuously record the pressure with a measuring device or gauge accurate to + /- 5 percent, calibrated once every 12 months.
[RULE 1303(a)(1)-BACT, 5-10-1996; RULE 2012, 12-7-1995; RULE 2012, 3-16-2001]
[Devices subject to this condition : C53, C58, C63]

D29.2 The operator shall conduct source test(s) for the pollutant(s) identified below.

Pollutants	Required Test Method	Averaging Time	Test Location
NH3	District Method 5.3 and 207.1 or EPA Method 17	1 hour	Outlet of the SCR

The test shall be conducted at least quarterly during the 1st twelve months of operation and at least annually thereafter, when the equipment is operating at 80 percent load or greater. The NOx concentration, as determined by the CEMS, shall be simultaneously recorded during the ammonia slip test. If the CEMS is inoperable, a test shall be conducted to determine the NOx emissions using District Method 100.1 measured over a 60 minute averaging time period.

The test shall be conducted and the results submitted to the AQMD within 45 days after the test date. The AQMD shall be notified of the date and time of the test at least 7 days prior to the test.

The test shall be conducted to demonstrate compliance with the Rule 1303 concentration limit.
[RULE 1303(a)(1)-BACT, 5-10-1996]
[Devices subject to this condition : C58, C63]

E73.2 Notwithstanding the requirements of Section E conditions, the operator may, at his discretion, choose not to use ammonia injection if any of the following requirement(s) are met:

The inlet exhaust temperature to the SCR reactor is less than 500 degrees F.
[RULE 2012, 12-7-1995; RULE 2012, 3-16-2001; RULE 2012, 5-11-2001]
[Devices subject to this condition : C58, C63]

E179.1 For the purpose of the following condition number(s), continuously record shall be defined as measuring at least once every hour, and shall be based upon the average of the continuous monitoring for that hour.

Condition Number D 12- 5
Condition Number D 12- 6
Condition Number A 195- 1
Condition Number C 1- 8
[RULE 1303(a)(1)-BACT, 5-10-1996; RULE 2012, 12-7-1995; RULE 2012, 3-16-2001]
[Devices subject to this condition : D16, C53, C58, D62, C63]

E179.2 For the purpose of the following condition number(s), continuously record shall be defined as measuring at least once every month, and shall be based upon the average of the continuous monitoring for that month.

Condition Number D 12- 7
[RULE 2012, 12-7-1995; RULE 2012, 3-16-2001]

[Devices subject to this condition : C53, C58, C63]

E193.3 The operator shall construct, operate, and maintain this equipment according to the following specifications:

In compliance with all mitigation measures as stipulated in the Mitigated Negative Declaration Resolution No. 26,245, dated May 28, 2002, pertaining to the Burbank Water and Power SCR project.
[CA PRC CEQA, 11-23-1970]
[Devices subject to this condition : D16, D17, C58, D62, C63]

K40.2 The operator shall provide to the District a source test report in accordance with the following specifications:

All exhaust flow rate shall be expressed in terms of dry standard cubic feet per minute (DSCFM) and dry actual cubic feet per minute (DACFM).

Source test results shall be submitted to the District no later than 180 days after the source test was conducted.

Source test results shall also include fuel flow rate (CFH), generator output in MW, and percent of total stack flow under which the test was conducted.

All moisture concentration shall be expressed in terms of percent corrected to 3 percent oxygen.

Emission data shall be expressed in terms of concentration (ppmv), corrected to 3 percent oxygen, dry basis.

Emission data shall be expressed in terms of mass rate (lbs/hr). In addition, solid PM emissions, if required to be tested, shall also be reported in terms of grains per DSCF.

Emission data shall be expressed in terms of lbs/MM cubic feet.
[RULE 1303(a)(1)-BACT, 5-10-1996; RULE 1303(b)(2)-O set, 5-10-1996; RULE 407, 4-2-1982; RULE 409, 8-7-1981]
[Devices subject to this condition : C58, C63]

Appendix A

Emission Calculations Olive #1

A. Fuel use

From manufacturer specification sheet:

Maximum boiler heat output = 454.716 mmbtu/hr
Overall boiler efficiency = 82.4%
Maximum heat input = (454.716 mmbtu/hr)/(.824) = 551.84 mmbtu/hr
Maximum fuel use = (551.84 mmbtu/hr)/(1050 btu/scf) = 0.5256 mmcf/hr

B. Emission Factors Used in Calculations

Pollutant	Uncontrolled (lb/mmcf)	Source	Controlled (lb/mmcf)	Source
NOx (Olive 1)	153.41[4]	40 CFR 75 data	6.374[1]	BARCT (5 ppmvd @ 3% O2)
CO	84	AP-42, July 1998	84	AP-42, July 1998
PM10	7.6	AP-42, July 1998	7.678	AP-42, July 1998[2]
ROG	5.5	AP-42, July 1998	5.5	AP-42, July 1998
SOx	0.6	AP-42, July 1998	0.562[2]	AP-42, July 1998
NH3 Slip	0	n/a	4.711[3]	BARCT (10 ppmvd @ 3% O2)

[1] NOx controlled = (5)(1E-06)(46/385.3)(8710)(20.9/17.9)(1050) = 6.374 lb/mmcf

[2] SCR vendor data specifies 6.3% conversion of SO2 to ammonium sulfate and sulfite. Converted SOx to PM10 = 0.60 lb/mmcf x 0.063 x 132 lb/lb-mol (NH4)2 (SO4)/64 lb/lb-mol SO2 = 0.078 lb/mmcf. Total PM10 = 7.6 + 0.078 = 7.678 lb/mmcf

[3] Ammonia slip, fuel use basis is calculated as follows: (10)(1E-06)(17/385.3)(8710)(20.9/17.9)(1050) = 4.711 lb/mmcf

(4) As provided by applicant, maximum value recorded by CEMS during the period between 7/1/1999 and 6/01/2001

C. Emission Summary

Pollutant	Maximum Uncontrolled		Maximum Controlled		30 Day Ave	Annual
	lb/hr	lb/day	lb/hr	lb/day	lb/day	lb/yr
NOx (Olive 1)	80.63	1935.18	3.35	80.40	80	29348
CO	44.15	1059.61	44.15	1059.61	1060	386758
PM10	3.99	95.87	4.04	96.85	97	35351
ROG	2.89	69.38	2.89	69.38	69	25323
SOx	0.32	7.57	0.30	7.09	7	2588
NH3	0	0.00	2.476	59.43	59	21691

Appendix B

Emission Calculations Olive #2

A. Fuel use

From manufacturer specification sheet:

Maximum boiler heat output = 520.22 mmbtu/hr
Overall boiler efficiency = 86.03%
Maximum heat input = (520.22 mmbtu/hr)/(.8603) = 604.70 mmbtu/hr
Maximum fuel use = (604.70 mmbtu/hr)/(1050 btu/scf) = 0.5759 mmcf/hr

B. Emission Factors Used in Calculations

Pollutant	Uncontrolled (lb/mmcf)	Source	Controlled (lb/mmcf)	Source
NOx (Olive 2)	161.25[4]	40 CFR 75 data	6.374[1]	BARCT (5 ppmvd @ 3% O2)
CO	84	AP-42, July 1998	84	AP-42, July 1998
PM10	7.6	AP-42, July 1998	7.605	AP-42, July 1998[2]
ROG	5.5	AP-42, July 1998	5.5	AP-42, July 1998
SOx	0.6	AP-42, July 1998	0.598[2]	AP-42, July 1998
NH3 Slip	0	n/a	4.711[3]	BARCT (10 ppmvd @ 3% O2)

[1] NOx controlled = (5)(1E-06)(46/385.3)(8710)(20.9/17.9)(1050) = 6.374 lb/mmcf

[2] SCR vendor data specifies 0.4% conversion of SO2 to ammonium sulfate and sulfite. Converted SOx to PM10 = 0.60 lb/mmcf x 0.004 x 132 lb/lb-mol (NH4)2 (SO4)/64 lb/lb-mol SO2 = 0.005 lb/hr. Total PM10 = 7.6 + 0.005 = 7.605 lb/mmcf

[3] Ammonia slip, fuel use basis is calculated as follows: (10)(1E-06)(17/385.3)(8710)(20.9/17.9)(1050) = 4.711 lb/mmcf

(4) As provided by applicant, maximum value recorded by CEMS during the period between 7/1/1999 and 6/01/2001

C. Emission Summary

Pollutant	Maximum Uncontrolled		Maximum Controlled		30 Day Ave	Annual
	lb/hr	lb/day	lb/hr	lb/day	lb/day	lb/yr
NOx (Olive 2)	92.86	2228.73	3.67	88.10	88	32156
CO	48.38	1161.01	48.38	1161.01	1161	423770
PM10	4.38	105.04	4.38	105.11	105	38366
ROG	3.17	76.02	3.17	76.02	76	27747
SOx	0.35	8.29	0.34	8.27	8	3017
NH3	0	0	2.71	65.11	65	23766

SOUTH COAST AIR QUALITY MANAGEMENT DISTRICT *ENGINEERING DIVISION* APPLICATION PROCESSING AND CALCULATIONS	PAGES 19	PAGE 1
	APPL. NO. 467881/2	DATE 2/7/2008
	PROCESSED BY CGP	CHECKED BY

PERMIT TO OPERATE EVALUATION

APPLICANT:
Burbank City, Burbank Water and Power
164 W. Magnolia Blvd
Burbank, CA 91502

EQUIPMENT LOCATION:
164 Magnolia Blvd
Burbank, CA 91502

EQUIPMENT DESCRIPTION:

Section D of the Reclaim Permit ID# 25638

Equipment	ID No.	Connected To	RECLAIM Source Type/ Monitoring Unit	Emissions and Requirements	Conditions
PROCESS 1: EXTERNAL COMBUSTION					
SYSTEM 1: POWER GENERATION					
BOILER, OLIVE NO. 1, NATURAL GAS, RILEY STOKER, WITH LO NOX BURNER, 551.84 MMBTU/HR WITH A/N: ~~397658~~ **467882** BURNER, NATURAL GAS, AUS MODEL DFL-815, SIX BURNERS, WITH LOW NOX BURNER, 551.84 MMBTU/HR GENERATOR, 44 MW	D17	~~C31~~ C58	NOX: MAJOR SOURCE	CO: 2000 PPMV (5) [RULE 407, 4-2-1982] ; NOX: 148. 67 LBS/MMSCF NATURAL GAS (1) [RULE 2012, 12-7-1995;RULE 2012, 5-11-2001] NOX: 5 PPMV NATURAL GAS (5) [RULE 2009, 5-11-2001] ; PM: 0. 1 GRAINS/SCF (5) [RULE 409, 8-7-1981] ; SO2: (9) [40CFR 72 - Acid Rain Provisions, 11-24-1997]	A99.1, A99.2, A99.6, A195.4, ~~D29.3~~, ~~D425.1~~, E57.3, E193.3, I331.1, ~~K40.1~~, ~~K40.2~~
SELECTIVE CATALYTIC REDUCTION, HALDOR TOPSOE A/S, 719.11 CU FT., WIDTH: 24 FT; HEIGHT: 7 FT 10 IN; LENGTH: 4 FT 10	C58	D17		NH3: 10 PPMV NATURAL GAS (4) [RULE 1303 BACT].	A195.5, D12.5, D12.6, D12.7, D29.2, E73.2,

Equipment	ID No.	Connected To	RECLAIM Source Type/ Monitoring Unit	Emissions and Requirements	Conditions
PROCESS 1: EXTERNAL COMBUSTION					
IN, WITH A/N: 397663 AMMONIA INJECTION GRID					E179.1, E179.2, E193.3 ~~K40.2~~
~~CYCLONE, GREEN AREODYNE, TYPE G, SIZE 16-22~~ ~~A/N: G00399~~	~~C31~~	~~D17~~			
BOILER, OLIVE NO. 2, NATURAL GAS, RILEY STOKER, S/N 3454, WITH SIX RILEY GAS BURNERS, 604.7 MMBTU/HR A/N: ~~397660~~ **467881** **GENERATOR, 55 MW**	D16	D62 C63	NOX: MAJOR SOURCE	CO: 2000 PPMV (5) [RULE 407, 4-2-1982] ; NOX: 148. 67 LBS/MMSCF NATURAL GAS (1) [RULE 2012, 12-7-1995;RULE 2012, 5-11-2001] NOX: 5 PPMV NATURAL GAS (5) [RULE 2009, 5-11-2001] ; PM: 0. 1 GRAINS/SCF (5) [RULE 409, 8-7-1981] ; SO2: (9) [40CFR 72 - Acid Rain Provisions, 11-24-1997]	A99.1, A99.6, A195.4, C1.8, ~~D29.3~~, ~~D425.1~~, E179.1, E193.3, ~~I331.1~~
~~BURNER, AIR PREHEAT, NATURAL GAS, ECLIPSE COMBUSTION, MODEL 63FFB-DP, 63 MMBTU/HR~~ ~~A/N: 397660~~	~~D62~~	~~D16~~	~~NOX: MAJOR SOURCE~~	~~CO: 2000 PPMV (5) [RULE 407, 4-2-1982] ; NOX: 148. 67 LBS/MMSCF NATURAL GAS (1) [RULE 2012, 12-7-1995;RULE 2012, 5-11-2001] NOX: 5 PPMV NATURAL GAS (4) [RULE 2009, 5-11-2001] ; PM: 0. 1 GRAINS/SCF (5) [RULE 409, 8-7-1981] ; SO2: (9) [40CFR 72—Acid Rain Provisions, 11-24-1997]~~	~~A99.6, A99.7, A195.4, C1.8, D29.3, E179.1, E193.3~~
SELECTIVE CATALYTIC REDUCTION, HALDOR TOPSOE A/S, 920.18 CU. FT, WIDTH: 24 FT 4.5 IN; HEIGHT: 13 FT 3.25 IN; LENGTH: 4 FT 6 IN WITH A/N: 397644 AMMONIA INJECTION GRID	C63	D16		NH3: 10 PPM NATURAL GAS	A195.5, D12.5, D12.6, D12.7, D29.2, E73.2, E179.1, E179.2, E193.3 ~~K40.2~~
~~PROCESS 4: COATING OPERATIONS~~					
~~SPRAY COATING OPERATION, WITH FABRIC FILTER, SPRAY~~	~~D27~~			~~PM: (9) [RULE 404, 2-7-1986] [RULE 1107, 5-12-1995;RULE 1107, 8-14-1998;RULE 1151,~~	~~C1.4, C1.5, C6.1, D12.2, D322.1,~~

Equipment	ID No.	Connected To	RECLAIM Source Type/ Monitoring Unit	Emissions and Requirements	Conditions
PROCESS 1: EXTERNAL COMBUSTION					
~~BOOTH~~ ~~A/N: G01980~~				~~12-9-1994;RULE 1151, 12-11-1998 RULE 1171, 5-12-1995; RULE 1171, 6-13-1997]~~	~~E57.1, H23.4, K67.2~~
~~SPRAY COATING OPERATION, WITH WATER CURTAIN~~ ~~A/N: G01403~~	~~D28~~			~~PM: (9) [RULE 404, 2-7-1986] [RULE 1107, 5-12-1995;RULE 1107, 8-14-1998; RULE 1171, 5-12-1995; RULE 1171, 6-13-1997]~~	~~C1.5, H23.4~~
~~PROCESS 6: VAPOR EXTRACTION AND TREATMENT~~					
~~VAPOR EXTRACTION WELL, WITH~~ ~~A/N: 322491~~ ~~BLOWER, 100 CU. FT./MIN~~	~~D44~~	~~C42~~			~~C6.2, D12.4, E175.1, K67.3~~
~~CARBON ADSORBER, CONNECTED IN SERIES WITH C43, 200 LBS~~ ~~A/N: 322491~~	~~C42~~	~~C43 D44~~		~~VOC: 1 PPM (4) [RULE 1303-BACT]~~	~~C6.2, D12.4, D28.1, E128.1, E175.1, K67.3~~
~~CARBON ADSORBER, CONNECTED IN SERIES WITH C42, 200 LBS~~ ~~A/N: 322491~~	~~C43~~	~~C42~~		~~VOC: 1 PPM (4) [RULE 1303-BACT]~~	~~C6.2, D12.4, D28.1, E128.1, E175.1, K67.3~~

COMPLIANCE HISTORY:

The facility has received 2 NOVs and 1 NC since 2005, two of the violations pertain to the boilers. Following is a summary:

Notice #	Violation Date	Description
P11637	2/3/05	Gas turbine Lake 1 exceeded ammonia slip limit
P46843	3/20/06	Boiler Olive 1 exceeded 5 ppm NOx limit
C98694	5/17/07	Facility must install dedicated fuel meter on preheat burner and report NOx emissions separately from boiler Olive 2

BACKGROUND:

City of Burbank submitted 3 applications to request changes to their Reclaim permit under ID#25638. The applications are listed in the following table:

A/N	Equipment	Application Type
467881	Boiler #2 D16	Modification
467882	Boiler #1 D17	Modification, No Engineering Evaluation
467883	None	Title V Minor Revision

PROCESS DESCRIPTION:

The facility is requesting the following changes be made to their permit:

Equipment	Requested Change
Boiler #1	Delete connection to C31 cyclone, which is no longer used.
Boiler #2	Remove the air preheat burner, which is no longer used and not needed with the addition of the SCR.
Vapor Extraction System	Delete vapor extraction well (D44) and 2 carbon canisters (C42, C43) which are no longer used.
Coating Operation	Delete the 2 spray coating booths (D27, D28) which are no longer used.
Boiler 1&2 SCRs	Issue final Permit to Operate

The cyclone connected to Boiler #1 was used in the past when the equipment fired fuel oil. Since fuel oil is no longer used, the cyclone is not needed.

The vapor extraction and coating equipment is no longer used, and can therefore be removed from the permit.

In 2003, Burbank added an SCR and a preheat burner to Boiler #2 as part of the air pollution control strategy for the boiler to comply with Rule 2009 limits. They had originally proposed an FGR system in conjunction with an SCR, but later modified their proposal to the preheat burner and SCR. The preheat burner acts to increase the temperature of the combustion air to about 600 degrees F, thus reducing start up time. Additionally, the oxygen depleted exhaust gas from the burner will be used as combustion air for the boiler, which reduces available O2 in the combustion zone, thereby reducing NOx formation. The preheat burner is rated at 63 mmbtu/hr. The current application requests that the permit clarify that the total heat input to Boiler #2 will not exceed the permitted level of 604.70 mmbtu/hr, which the facility controls by monitoring the fuel input (reference A/N 397660). A condition will be added to the boiler limiting the total heat input to 604.70 mmbtu/hr.

Source Test Results

After installation of the SCRs in 2003, the units were stack tested. The test results were reviewed and deemed acceptable by AQMD source testing staff. Following is a summary of the results:

Olive Unit #1 (test dates 6/9/03& 6/10/03)

Pollutant	Ammonia Injection On	Ammonia Injection Off
25% Load		
NOx ppm @ 3%	3.66	80.12
CO ppm @ 3%	<32	<32
50% Load		
NOx ppm @ 3%	3.75	73.54
CO ppm @ 3%	<25	<24
75% Load		
NOx ppm @ 3%	3.89	72:63
CO ppm @ 3%	<22	<21
100% Load		
NOx ppm @ 3%	3.96	90.98
CO ppm @ 3%	<21	<20

Olive Unit #2 (test dates 9/9/03 & 9/10/03)

Pollutant	Ammonia Injection On	Ammonia Injection Off
Minimum Load		
NOx ppm @ 3%	4.24	82.4
CO ppm @ 3%	<42.0	<44.3
50% Load		
NOx ppm @ 3%	4.03	75.1
CO ppm @ 3%	<22.6	<22.9
75% Load		
NOx ppm @ 3%	4.45	80.3
CO ppm @ 3%	<19.5	<19.7
100% Load		
NOx ppm @ 3%	4.21	94.0
CO ppm @ 3%	<19.1	<19.3

The test results verify that the units can achieve the BARCT limits with the use of the SCRs.

Burbank was asked to submit NOx CEMS data to show that Olive #2 can still meet the 5 ppm NOx limits without the preheat burner. The facility stated that there is limited data for the unit since is does not operate very often. However, they were able to submit data

for the periods between 12/4/05-12/8/05 and 1/6/06-1/8/06. This data showed that except during start up and shutdown, the unit met the 5 ppm NOx limit. The data is included in the file for reference.

EMISSIONS:

There are no emission changes as a result of the removal of the cyclone on Olive #1 and the removal of the preheat burner on Olive #2. Therefore, emissions can be taken from the previous files, and are as follows:

Boiler #1 (previous A/N 397660)

Pollutant	Maximum Uncontrolled		Maximum Controlled		30 Day Ave	Annual
	lb/hr	lb/day	lb/hr	lb/day	lb/day	lb/yr
NOx (Olive 1)	80.63	1935.18	3.35	80.40	80	29348
CO	44.15	1059.61	44.15	1059.61	1060	386758
PM10	3.99	95.87	4.04	96.85	97	35351
ROG	2.89	69.38	2.89	69.38	69	25323
SOx	0.32	7.57	0.30	7.09	7	2588
NH3	0	0.00	2.476	59.43	59	21691

Boiler #2 (previous A/N 397658)

Pollutant	Maximum Uncontrolled		Maximum Controlled		30 Day Ave	Annual
	lb/hr	lb/day	lb/hr	lb/day	lb/day	lb/yr
NOx (Olive 2)	92.86	2228.73	3.67	88.10	88	32156
CO	48.38	1161.01	48.38	1161.01	1161	423770
PM10	4.38	105.04	4.38	105.11	105	38366
ROG	3.17	76.02	3.17	76.02	76	27747
SOx	0.35	8.29	0.34	8.27	8	3017
NH3	0	0	2.71	65.11	65	23766

EVALUATION:

Rule 401 – Visible Emissions

Visible emissions are not expected under normal operation of the boilers. There have been no complaints of visible emissions on this equipment in at least the past 2 years.

Rule 402 -Nuisance

Nuisance problems are not expected from operation of the boielrs, and there is no history of nuisance problems with this equipment.

Rule 407 – Liquid and Gaseous Air Contaminants

This rule sets the CO limit to 2000 ppm. The stack tests on the boilers show they are well below this limit. Continued compliance is expected.

Rule 409 – Combustion Contaminants

This rule limits the particulate matter emissions from the boilers to 0.1 gr/scf. The boilers are expected to comply based on the following calculations:

Olive 1

PM emission rate = 3.99 lbs/hr.
Conversion factor to grains = 7000 gr/lb
Fuel F-factor = 8710 scf/mmbtu @ 0% O2
Conversion factor to 3% O2 = (20.9/20.9-3) = 1.17

Exhaust flow calculation:

551.84 mmbtu/hr (8710 scf/mmbtu) (1.17) = 5.62 mmscf/hr

Grain loading calculation:

(3.99 lbs/hr X 7000 gr/lb)/(5.62 mmscf/hr) = 0.005 gr/scf

Olive 2

PM emission rate = 4.38 lbs/hr.
Conversion factor to grains = 7000 gr/lb
Fuel F-factor = 8710 scf/mmbtu @ 0% O2
Conversion factor to 3% O2 = (20.9/20.9-3) = 1.17

Exhaust flow calculation:

604.7 mmbtu/hr (8710 scf/mmbtu) (1.17) = 6.16 mmscf/hr

Grain loading calculation:

(4.38 lbs/hr X 7000 gr/lb)/(6.16 mmscf/hr) = 0.005 gr/scf

Rule 431.1 – Sulfur Content of Gaseous Fuels
This rule limits the natural gas fired in the boilers to 16 ppm SO2. The boilers use pipeline natural gas supplied by the Gas Company, which typically is well below 16 ppm SO2. Compliance is expected.

Regulation XIII – New Source Review
At the time the Permit to Construct was issued, a BACT limit of 10 ppm NH3 slip was set for each boiler. The results of the stack testing show the equipment can meet this limit.

Rule 2009 – Compliance Plans for Power Producing Facilities
This rule set a 5 ppm NOx limit (1 hour average) for Olive 1 and 2 as BARCT (Best Available Retrofit Control Technology). The stack testing on the boilers show that they can meet the limit. Even though Olive #1 exceeded the limit in March of 2006, it appears that was an isolated incident and there haven't been any other violations since. Continued compliance is expected.

Rule 2012 – NOx RECLAIM
This rule requires the boilers, as NOx major sources, to install a CEMS, record NOx, and report daily NOx mass emissions electronically to AQMD. The CEMS must include a NOx and O2 analyzer, a fuel meter and a data handling and storage device. Also, the rule requires that operating data on the SCRs be recorded, such as ammonia injection rate, exhaust temperature prior to the SCR, and pressure drop across the SCR catalyst bed. The facility has provided this equipment and is currently in compliance with the requirements of this rule.

RECOMMENDATION:

Issue a revised Reclaim permit, moving Boilers 1 and 2 and their respective SCRs into Section D. The initial testing conditions can be removed, all other conditions remain the same. Note that for the vapor extraction equipment and the spray booths, all associated conditions will be removed.

CONDITIONS:

Olive #1

A99.1 The 148.67 lbs/mmcf NOx emission limit(s) shall only apply during hot standby operations when burning natural gas.
[Rule 2012]
[Devices subject to this condition: D17]

A99.6 The 5 ppmv NOx emission limit shall not apply during startups and shutdowns and/or when the boiler exhaust prior to the SCR catalyst is less than 410 Deg. F.
[Rule 2009]
[Devices subject to this condition: D16, D17]

A195.4 The 5 ppmv NOx emission limit is averaged over 60 minutes at 3 percent oxygen, dry.
[Rule 2009]
[Devices subject to this condition: D16, D17]

~~D29.3 The operator shall conduct source tests for the pollutants identified below:~~

~~Pollutants~~	~~Required Test Method~~	~~Averaging Time~~	~~Test Location~~
~~NOx~~	~~District Method 100.1~~	~~1 hour~~	~~Outlet of the SCR~~
~~NH3~~	~~District Method 5.3 and 207.1 or EPA Method 17~~	~~1 hour~~	~~Outlet of the SCR~~

~~The test shall be conducted to determine the oxygen levels in the exhaust. In addition, the test shall measure the fuel flow rate (CFH), the flue gas flow rate, and the generator output (MW).~~

~~The test shall be conducted in accordance with an AQMD approved source test protocol. The protocol shall be submitted to the AQMD permitting engineer no later than 45 days before the proposed test date, and shall be approved by the AQMD before the test commences. The test protocol shall include the proposed operating conditions of the boilers during the tests, the identity of the testing lab, a statement from the testing lab certifying it meets the criteria of R304, and a description of all sampling and analytical procedures.~~

~~The tests shall be conducted with and without ammonia injection when this equipment is operating at loads of 100, 75, and 50 percent, and the minimum load at which ammonia injection occurs during the NOx test.~~

~~The test shall be conducted with ammonia injection when this equipment is operating at loads of 100, 75, 50 percent, and the minimum load at which ammonia injection occurs during the NH3 tests.~~

~~The test shall be conducted within 60 days after achieving maximum production rate, but no later than 180 days after initial start-up.~~
~~[Rule 1303 – BACT, Rule 2009]~~

~~[Devices subject to this condition: D16, D17]~~

~~D425.1 The operator shall have the existing NOx CEMS monitoring this device reevaluated by the District by submitting a CEMS application. If recerti cation is necessary, the operator shall have the existing CEMS monitoring this device recertified within 90 days of the start up of the modification of this device. If the CEMS is not recertified within 90 days of start-up of this device, the facility permit holder shall calculate and report NOx emissions in accordance with Rule 2012, Appendix A, Chapter 2, Paragraph (B)(16).~~
~~[RULE 2012, 12-7-1995; RULE 2012, 5-11-2001]~~
~~[Devices subject to this condition : D16, D17]~~

E57.3 The operator shall vent this equipment to air pollution control equipment which is in full operation and has been issued a permit by the executive officer whenever soot-blowing operations are taking place.
[RULE 401, 3-2-1984; RULE 401, 9-11-1998]
[Devices subject to this condition : D17]

E193.3 The operator shall upon completion of construction, operate and maintain this equipment according to the following specifications:

In compliance with all mitigation measures as stipulated in the Mitigated Negative Declaration Resolution No. 26,245, dated May 28, 2002, pertaining to the Burbank Water and Power SCR project.

[CA PRC CEQA]
[Devices subject to this condition: D17, C58]

~~I331.1 The conditions and requirements for this device in Section H shall take effect, and shall supersede those in Section D, when the modifications authorized in Section H are completed. The operator shall notify the AQMD when the modifications are completed.~~
~~[Rule 202]~~
~~[Devices subject to this condition: D17, D18, D19]~~

~~K40.1 The operator shall provide to the District a source test report in accordance with the following specifications:~~

~~Source test results shall be submitted to the District no later than 180 days after the source test was conducted.~~

~~Source test results shall also include fuel flow rate, flue gas flow rate and net boiler and steam turbine electric generator output in MW under which the test was conducted.~~

~~[Rule 1303, 2012]~~

~~[Devices subject to this condition: D17]~~

~~K40.2 The operator shall provide to the District a source test report in accordance with the following specifications:~~

~~All exhaust flow rate shall be expressed in terms of dry standard cubic feet per minute (DSCFM) and dry actual cubic feet per minute (DACFM).~~

~~Source test results shall be submitted to the District no later than 180 days after the source test was conducted.~~

~~Source test results shall also include fuel flow rate (CFH), generator output in MW, and percent of total stack flow under which the test was conducted.~~

~~All moisture concentration shall be expressed in terms of percent corrected to 3 percent oxygen.~~

~~Emission data shall be expressed in terms of concentration (ppmv), corrected to 3 percent oxygen, dry basis.~~

~~Emission data shall be expressed in terms of mass rate (lbs/hr). In addition, solid PM emissions, if required to be tested, shall also be reported in terms of grains per DSCF.~~

~~Emission data shall be expressed in terms of lbs/MM cubic feet.~~

~~[RULE 1303(a)(1) BACT, 5-10-1996; RULE 1303(b)(2) O set, 5-10-1996; RULE 407, 4-2-1982; RULE 409, 8-7-1981]~~

~~[Devices subject to this condition : D17]~~

Olive #2

A99.1 The 148.67 lbs/mmcf NOx emission limit(s) shall only apply during hot standby operations when burning natural gas.

[Rule 2012]

[Devices subject to this condition: D16]

A99.6 The 5 ppmv NOx emission limit shall not apply during startups and shutdowns and/or when the boiler exhaust prior to the SCR catalyst is less than 410 Deg. F.

[Rule 2009]

[Devices subject to this condition: D16, D17]

A195.4 The 5 ppmv NOx emission limit is averaged over 60 minutes at 3 percent oxygen, dry.

[Rule 2009]

[Devices subject to this condition: D16, D17]

~~D29.3 The operator shall conduct source tests for the pollutants identified below:~~

~~Pollutants~~	~~Required Test Method~~	~~Averaging Time~~	~~Test Location~~
~~NOx~~	~~District Method 100.1~~	~~1 hour~~	~~Outlet of the SCR~~
~~NH3~~	~~District Method 5.3 and 207.1 or EPA Method 17~~	~~1 hour~~	~~Outlet of the SCR~~

~~The test shall be conducted to determine the oxygen levels in the exhaust. In addition, the test shall measure the fuel flow rate (CFH), the flue gas flow rate, and the generator output (MW).~~

~~The test shall be conducted in accordance with an AQMD approved source test protocol. The protocol shall be submitted to the AQMD permitting engineer no later than 45 days before the proposed test date, and shall be approved by the AQMD before the test commences. The test protocol shall include the proposed operating conditions of the boilers during the tests, the identity of the testing lab, a statement from the testing lab certifying it meets the criteria of R304, and a description of all sampling and analytical procedures.~~

~~The tests shall be conducted with and without ammonia injection when this equipment is operating at loads of 100, 75, and 50 percent, and the minimum load at which ammonia injection occurs during the NOx test.~~

~~The test shall be conducted with ammonia injection when this equipment is operating at loads of 100, 75, 50 percent, and the minimum load at which ammonia injection occurs during the NH3 tests.~~

~~The test shall be conducted within 60 days after achieving maximum production rate, but no later than 180 days after initial start-up.~~

~~[Rule 1303 - BACT, Rule 2009]~~

~~[Devices subject to this condition: D16, D17]~~

~~D425.1 The operator shall have the existing NOx CEMS monitoring this device reevaluated by the District by submitting a CEMS application. If recerti cation is~~

~~necessary, the operator shall have the existing CEMS monitoring this device recertified within 90 days of the start up of the modification of this device. If the CEMS is not recertified within 90 days of start up of this device, the facility permit holder shall calculate and report NOx emissions in accordance with Rule 2012, Appendix A, Chapter 2, Paragraph (B)(16).~~
~~[RULE 2012, 12-7-1995; RULE 2012, 5-11-2001]~~
~~[Devices subject to this condition : D16, D17]~~

E179.1 For the purpose of the following condition number(s), continuously record shall be defined as measuring at least once every hour, and shall be based upon the average of the continuous monitoring for that hour.

Condition Number D 12- 5
Condition Number D 12- 6
Condition Number A 195- 1
Condition Number C 1- 8
[RULE 1303(a)(1)-BACT, 5-10-1996; RULE 2012, 12-7-1995; RULE 2012, 3-16-2001]
[Devices subject to this condition : D16, C53, C58, D62, C63]

E193.3 The operator shall construct, operate, and maintain this equipment according to the following specifications:

In compliance with all mitigation measures as stipulated in the Mitigated Negative Declaration Resolution No. 26,245, dated May 28, 2002, pertaining to the Burbank Water and Power SCR project.
[CA PRC CEQA, 11-23-1970]
[Devices subject to this condition : D16, D17, C58, D62, C63]

~~I331.1 The conditions and requirements for this device in Section H shall take effect, and shall supersede those in Section D, when the modifications authorized in Section H are completed. The operator shall notify the AQMD when the modifications are completed.~~
~~[Rule 202]~~
~~[Devices subject to this condition: D17, D18, D19]~~

SCR's #1 & #2

A195.5 The 10 PPMV NH3 emission limit(s) is averaged over 60 minutes at 3 percent O2 dry. The operator shall calculate and continuously record the NH3 slip concentration using the following: NH3(ppmv)= [a- b*c/1E6]*1E6/b, where a= NH3 injection rate

(lb/hr)/17 (lb/lb/mole), b= dry exhaust gas ow rate (lb/hr)/29(lb/lb/mole), and c= change in measured NOx across the SCR (ppmvd at 3 percent O2). The operator shall install and maintain a NOx analyzer to measure the SCR inlet NOx ppm accurate to within + /- 5 percent calibrated at least once every 12 months.

The operator shall use the method described above or another alternative method approved by the Executive Officer.

The ammonia slip calculation procedures described above shall not be used for compliance determination or emission information determination without corroborative data using an approved reference test method for the determination of ammonia.
[RULE 1303(a)(1)-BACT, 5-10-1996]
[Devices subject to this condition : C58, C63]

D12.5 The operator shall install and maintain a(n) flow meter to accurately indicate the flow rate of the total hourly throughput of injected ammonia. The operator shall continuously record the flow rate with a measuring device or gauge accurate to + /- 5 percent, calibrated once every 12 months.
[RULE 1303(a)(1)-BACT, 5-10-1996; RULE 2012, 12-7-1995; RULE 2012, 3-16-2001]
[Devices subject to this condition : C53, C58, C63]

D12.6 The operator shall install and maintain a(n) temperature gauge to accurately indicate the temperature of the exhaust at the inlet to the SCR reactor. The operator shall continuously record the temperature with a measuring device or gauge accurate to + /- 5 percent, calibrated once every 12 months.
[RULE 1303(a)(1)-BACT, 5-10-1996; RULE 2012, 12-7-1995; RULE 2012, 3-16-2001]
[Devices subject to this condition : C53, C58, C63]

D12.7 The operator shall install and maintain a(n) pressure gauge to accurately indicate the differential pressure across the SCR catalyst bed in inches of water column. The operator shall continuously record the pressure with a measuring device or gauge accurate to + /- 5 percent, calibrated once every 12 months.
[RULE 1303(a)(1)-BACT, 5-10-1996; RULE 2012, 12-7-1995; RULE 2012, 3-16-2001]
[Devices subject to this condition : C53, C58, C63]

D29.2 The operator shall conduct source test(s) for the pollutant(s) identified below.

Pollutants	Required Test Method	Averaging Time	Test Location
NH3	District Method 5.3 and 207.1 or EPA Method 17	1 hour	Outlet of the SCR

The test shall be conducted at least quarterly during the 1st twelve months of operation and at least annually thereafter, when the equipment is operating at 80 percent load or greater. The NOx concentration, as determined by the CEMS, shall be simultaneously recorded during the ammonia slip test. If the CEMS is inoperable, a test shall be conducted to determine the NOx emissions using District Method 100.1 measured over a 60 minute averaging time period.

The test shall be conducted and the results submitted to the AQMD within 45 days after the test date. The AQMD shall be notified of the date and time of the test at least 7 days prior to the test.

The test shall be conducted to demonstrate compliance with the Rule 1303 concentration limit.
[RULE 1303(a)(1)-BACT, 5-10-1996]
[Devices subject to this condition : C58, C63]

E73.2 Notwithstanding the requirements of Section E conditions, the operator may, at his discretion, choose not to use ammonia injection if any of the following requirement(s) are met:

The inlet exhaust temperature to the SCR reactor is less than 500 degrees F.
[RULE 2012, 12-7-1995; RULE 2012, 3-16-2001; RULE 2012, 5-11-2001]
[Devices subject to this condition : C58, C63]

E179.1 For the purpose of the following condition number(s), continuously record shall be defined as measuring at least once every hour, and shall be based upon the average of the continuous monitoring for that hour.

Condition Number D 12- 5
Condition Number D 12- 6
Condition Number A 195- 1
Condition Number C 1- 8
[RULE 1303(a)(1)-BACT, 5-10-1996; RULE 2012, 12-7-1995; RULE 2012, 3-16-2001]
[Devices subject to this condition : D16, C53, C58, D62, C63]

E179.2 For the purpose of the following condition number(s), continuously record shall be defined as measuring at least once every month, and shall be based upon the average of the continuous monitoring for that month.

Condition Number D 12- 7
[RULE 2012, 12-7-1995; RULE 2012, 3-16-2001]

[Devices subject to this condition : C53, C58, C63]

E193.3 The operator shall construct, operate, and maintain this equipment according to the following specifications:

In compliance with all mitigation measures as stipulated in the Mitigated Negative Declaration Resolution No. 26,245, dated May 28, 2002, pertaining to the Burbank Water and Power SCR project.
[CA PRC CEQA, 11-23-1970]
[Devices subject to this condition : D16, D17, C58, D62, C63]

K40.2 The operator shall provide to the District a source test report in accordance with the following specifications:

All exhaust flow rate shall be expressed in terms of dry standard cubic feet per minute (DSCFM) and dry actual cubic feet per minute (DACFM).

Source test results shall be submitted to the District no later than 180 days after the source test was conducted.

Source test results shall also include fuel flow rate (CFH), generator output in MW, and percent of total stack flow under which the test was conducted.

All moisture concentration shall be expressed in terms of percent corrected to 3 percent oxygen.

Emission data shall be expressed in terms of concentration (ppmv), corrected to 3 percent oxygen, dry basis.

Emission data shall be expressed in terms of mass rate (lbs/hr). In addition, solid PM emissions, if required to be tested, shall also be reported in terms of grains per DSCF.

Emission data shall be expressed in terms of lbs/MM cubic feet.
[RULE 1303(a)(1)-BACT, 5-10-1996; RULE 1303(b)(2)-O set, 5-10-1996; RULE 407, 4-2-1982; RULE 409, 8-7-1981]
[Devices subject to this condition : C58, C63]

Appendix A

Emission Calculations Olive #1

A. Fuel use

From manufacturer specification sheet:

Maximum boiler heat output = 454.716 mmbtu/hr
Overall boiler efficiency = 82.4%
Maximum heat input = (454.716 mmbtu/hr)/(.824) = 551.84 mmbtu/hr
Maximum fuel use = (551.84 mmbtu/hr)/(1050 btu/scf) = 0.5256 mmcf/hr

B. Emission Factors Used in Calculations

Pollutant	Uncontrolled (lb/mmcf)	Source	Controlled (lb/mmcf)	Source
NOx (Olive 1)	153.41[4]	40 CFR 75 data	6.374[1]	BARCT (5 ppmvd @ 3% O2)
CO	84	AP-42, July 1998	84	AP-42, July 1998
PM10	7.6	AP-42, July 1998	7.678	AP-42, July 1998[2]
ROG	5.5	AP-42, July 1998	5.5	AP-42, July 1998
SOx	0.6	AP-42, July 1998	0.562[2]	AP-42, July 1998
NH3 Slip	0	n/a	4.711[3]	BARCT (10 ppmvd @ 3% O2)

[1] NOx controlled = (5)(1E-06)(46/385.3)(8710)(20.9/17.9)(1050) = 6.374 lb/mmcf

[2] SCR vendor data specifies 6.3% conversion of SO2 to ammonium sulfate and sulfite. Converted SOx to PM10 = 0.60 lb/mmcf x 0.063 x 132 lb/lb-mol (NH4)2 (SO4)/64 lb/lb-mol SO2 = 0.078 lb/mmcf. Total PM10 = 7.6 + 0.078 = 7.678 lb/mmcf

[3] Ammonia slip, fuel use basis is calculated as follows: (10)(1E-06)(17/385.3)(8710)(20.9/17.9)(1050) = 4.711 lb/mmcf

(4) As provided by applicant, maximum value recorded by CEMS during the period between 7/1/1999 and 6/01/2001

C. Emission Summary

Pollutant	Maximum Uncontrolled		Maximum Controlled		30 Day Ave	Annual
	lb/hr	lb/day	lb/hr	lb/day	lb/day	lb/yr
NOx (Olive 1)	80.63	1935.18	3.35	80.40	80	29348
CO	44.15	1059.61	44.15	1059.61	1060	386758
PM10	3.99	95.87	4.04	96.85	97	35351
ROG	2.89	69.38	2.89	69.38	69	25323
SOx	0.32	7.57	0.30	7.09	7	2588
NH3	0	0.00	2.476	59.43	59	21691

Appendix B

Emission Calculations Olive #2

A. Fuel use

From manufacturer specification sheet:

Maximum boiler heat output = 520.22 mmbtu/hr
Overall boiler efficiency = 86.03%
Maximum heat input = (520.22 mmbtu/hr)/(.8603) = 604.70 mmbtu/hr
Maximum fuel use = (604.70 mmbtu/hr)/(1050 btu/scf) = 0.5759 mmcf/hr

B. Emission Factors Used in Calculations

Pollutant	Uncontrolled (lb/mmcf)	Source	Controlled (lb/mmcf)	Source
NOx (Olive 2)	161.25[4]	40 CFR 75 data	6.374[1]	BARCT (5 ppmvd @ 3% O2)
CO	84	AP-42, July 1998	84	AP-42, July 1998
PM10	7.6	AP-42, July 1998	7.605	AP-42, July 1998[2]
ROG	5.5	AP-42, July 1998	5.5	AP-42, July 1998
SOx	0.6	AP-42, July 1998	0.598[2]	AP-42, July 1998
NH3 Slip	0	n/a	4.711[3]	BARCT (10 ppmvd @ 3% O2)

[1] NOx controlled = (5)(1E-06)(46/385.3)(8710)(20.9/17.9)(1050) = 6.374 lb/mmcf

[2] SCR vendor data specifies 0.4% conversion of SO2 to ammonium sulfate and sulfite. Converted SOx to PM10 = 0.60 lb/mmcf x 0.004 x 132 lb/lb-mol (NH4)2 (SO4)/64 lb/lb-mol SO2 = 0.005 lb/hr. Total PM10 = 7.6 + 0.005 = 7.605 lb/mmcf

[3] Ammonia slip, fuel use basis is calculated as follows: (10)(1E-06)(17/385.3)(8710)(20.9/17.9)(1050) = 4.711 lb/mmcf

(4) As provided by applicant, maximum value recorded by CEMS during the period between 7/1/1999 and 6/01/2001

C. Emission Summary

Pollutant	Maximum Uncontrolled		Maximum Controlled		30 Day Ave	Annual
	lb/hr	lb/day	lb/hr	lb/day	lb/day	lb/yr
NOx (Olive 2)	92.86	2228.73	3.67	88.10	88	32156
CO	48.38	1161.01	48.38	1161.01	1161	423770
PM10	4.38	105.04	4.38	105.11	105	38366
ROG	3.17	76.02	3.17	76.02	76	27747
SOx	0.35	8.29	0.34	8.27	8	3017
NH3	0	0	2.71	65.11	65	23766